

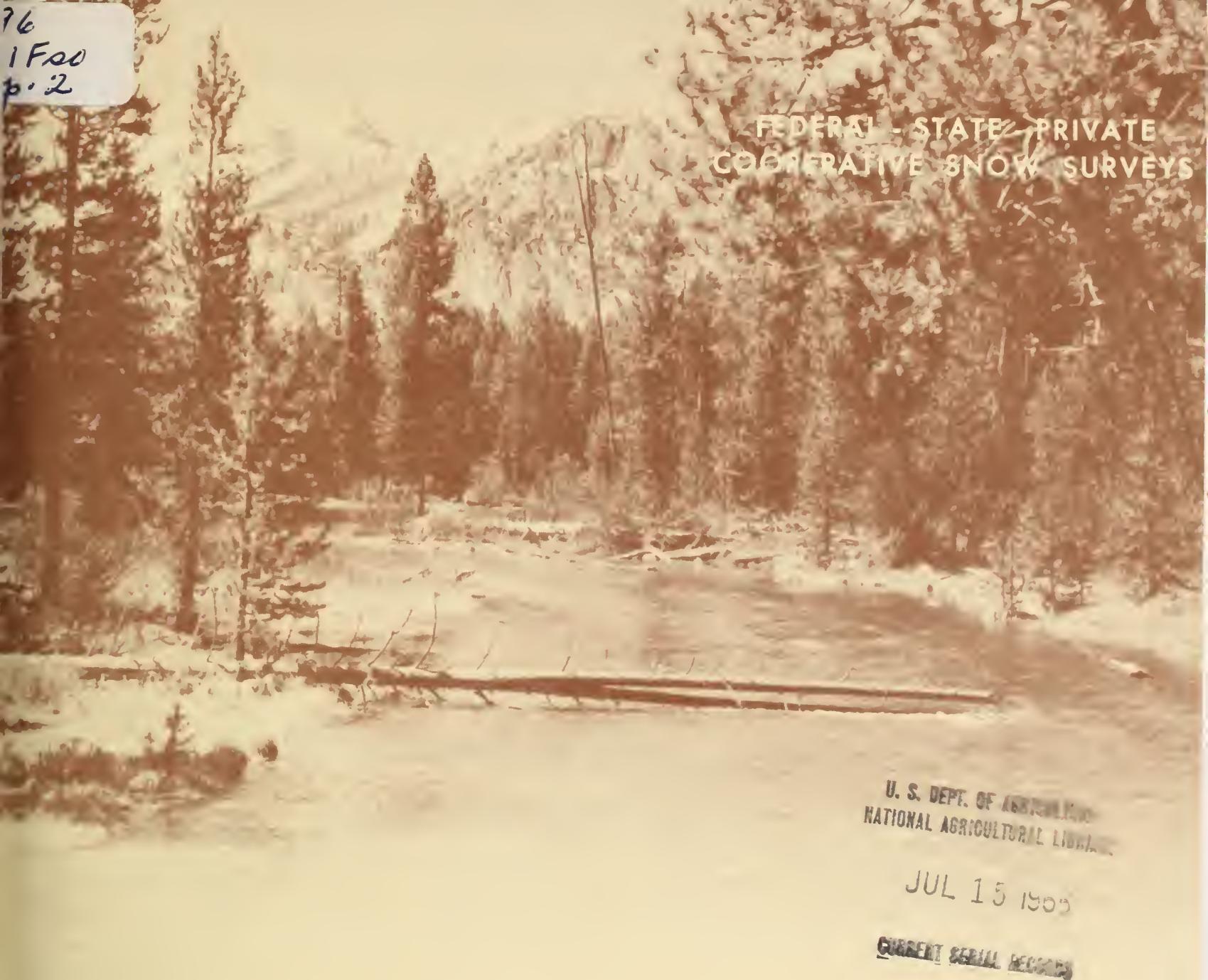
## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



76  
1 Foo  
p. 2

FEDERAL - STATE - PRIVATE  
COOPERATIVE SNOW SURVEYS



U. S. DEPT. OF AGRICULTURE  
NATIONAL AGRICULTURAL LIBRARY

JUL 15 1966

CURRENT SERIAL NUMBER

**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
for  
**OREGON**

UNITED STATES DEPARTMENT of AGRICULTURE - SOIL CONSERVATION SERVICE  
and  
OREGON STATE UNIVERSITY  
and  
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above  
in cooperation with other Federal, State and private organizations.

AS OF  
JUNE 1, 1966

# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## To Recipients of Water Supply Outlook Reports:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

## PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
<b>RIVER BASINS</b>			
WESTERN UNITED STATES			
MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS	
BASIC DATA SUMMARY	OCTOBER 1	PORTLAND, OREGON	ALL COOPERATORS
<b>STATES</b>			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
GOLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

## PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RESOURCES SERVICE, DEPT. OF LANDS. FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
**for**  
**OREGON**

ISSUED

JUNE 8, 1966

*Report prepared by*

W. T. FROST, Snow Survey Supervisor  
and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE  
1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

*Issued by*

A. J. WEBBER  
STATE CONSERVATIONIST  
SOIL CONSERVATION SERVICE

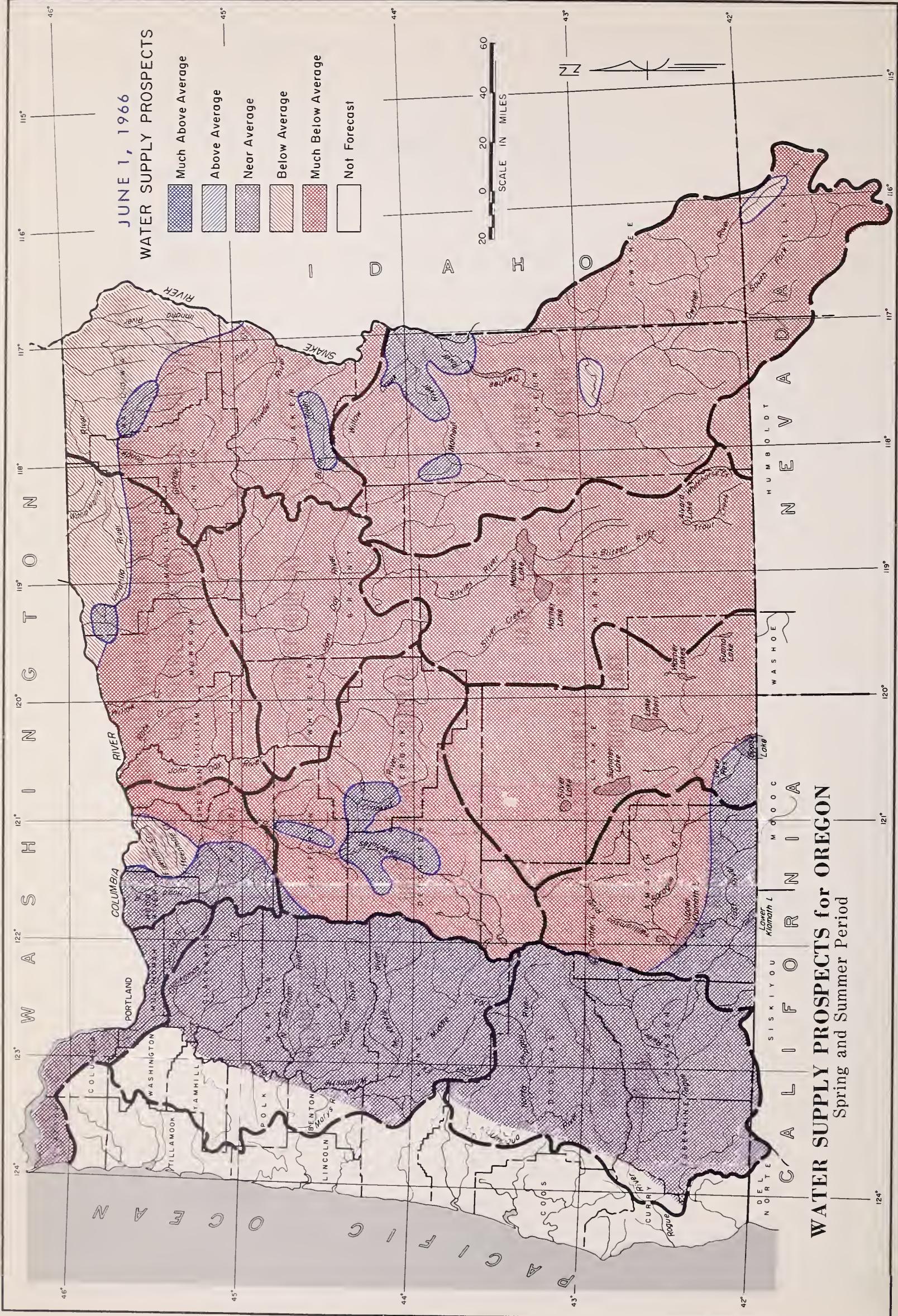
G. BURTON WOOD  
DIRECTOR  
OREGON AGRICULTURAL  
EXPERIMENT STATION

CHRIS L. WHEELER  
STATE ENGINEER  
STATE OF OREGON



## TABLE OF CONTENTS

	PAGE
WATER SUPPLY PROSPECTS FOR OREGON.....(MAP).....	FACING PAGE 1
WATER SUPPLY OUTLOOK FOR OREGON.....	1
STORAGE STATUS OF OREGON RESERVOIRS.....(MAP).....	3
MOUNTAIN SOIL MOISTURE IN OREGON.....(MAP).....	4
VALLEY PRECIPITATION IN OREGON.....(MAP AND TABLE).....	5
CURRENT OREGON STREAMFLOW.....(GRAPH).....	6
 DETAILED WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS	
OWYHEE, MALHEUR.....	AREA 1
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA.....	AREA 2
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY.....	AREA 3
UPPER JOHN DAY.....	AREA 4
UPPER DESCHUTES, CROOKED.....	AREA 5
HOOD, MILE CREEKS, LOWER DESCHUTES.....	AREA 6
LOWER COLUMBIA.....	AREA 7
WILLAMETTE.....	AREA 8
ROQUE, UMPQUA.....	AREA 9
KLAMATH.....	AREA 10
LAKE COUNTY, GOOSE LAKE.....	AREA 11
HARNEY BASIN.....	AREA 12
PREVIOUSLY UNPUBLISHED AND ERRATA SNOW DATA.....	APPENDIX
MAP AND INDEX OF OREGON SNOW COURSES.....(MAP)	
LIST OF COOPERATORS.....	INSIDE BACK COVER



# WATER SUPPLY OUTLOOK for OREGON

JUNE 1, 1966

Crop failure looms on the horizon for much of the dry-land agriculture of Oregon and for many irrigated acres served by direct diversion from streams because of continued lack of precipitation complicated by colder than usual winds. Stored water will "save the day" for most lands served from reservoirs.

## SNOW COVER

Mountain snowpacks have melted back at a very rapid rate this year due to very short precipitation and abnormal temperatures and winds. Snow remains now only at very high elevations and in such small amounts that late season streamflow will receive little or no assistance from this important source.

## SOIL MOISTURE

Moisture in the soil mantle on upper watersheds has been reduced from its wettest condition by the prolonged drought and continuing winds. Ranges are in poor condition.

## RESERVOIR STORAGE

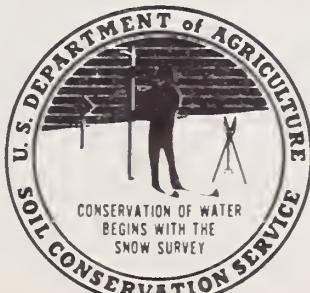
Total water stored in 25 Oregon reservoirs furnishing most of the irrigation supplies is 94 percent of the 15-year average (1948-62) and 79 percent of last year's abundant supplies. McKay Reservoir in Umatilla County and Antelope Reservoir in Owyhee County are not expected to furnish full water supplies this summer.

## STREAMFLOW

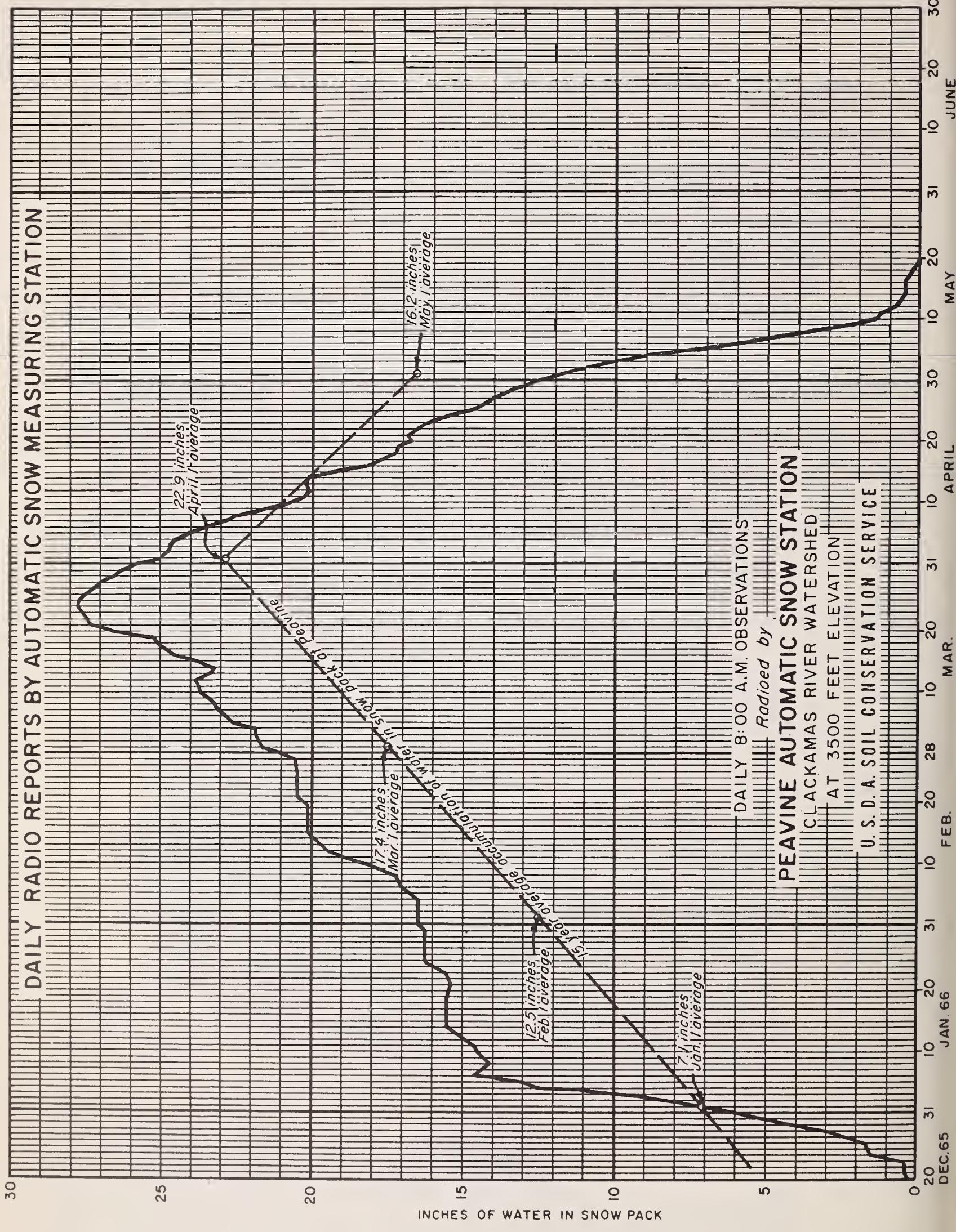
Forecasts of expected summer streamflow vary from about average (94-102 percent) on the Illinois and Applegate Rivers to lows of 11 and 12 percent of average on Crooked River and Ochoco Creek. West slope of the Cascades will produce flows of about 78 percent average and similar flows are forecast on the Deschutes, White and Hood Rivers.

Klamath and Wallowa Rivers are forecast at 52 to 64 percent, along with Walla Walla and the Umatilla.

Lake County streams and Powder River are listed at 44 to 49 percent. All other streams are forecast in the 30 percent area or less.



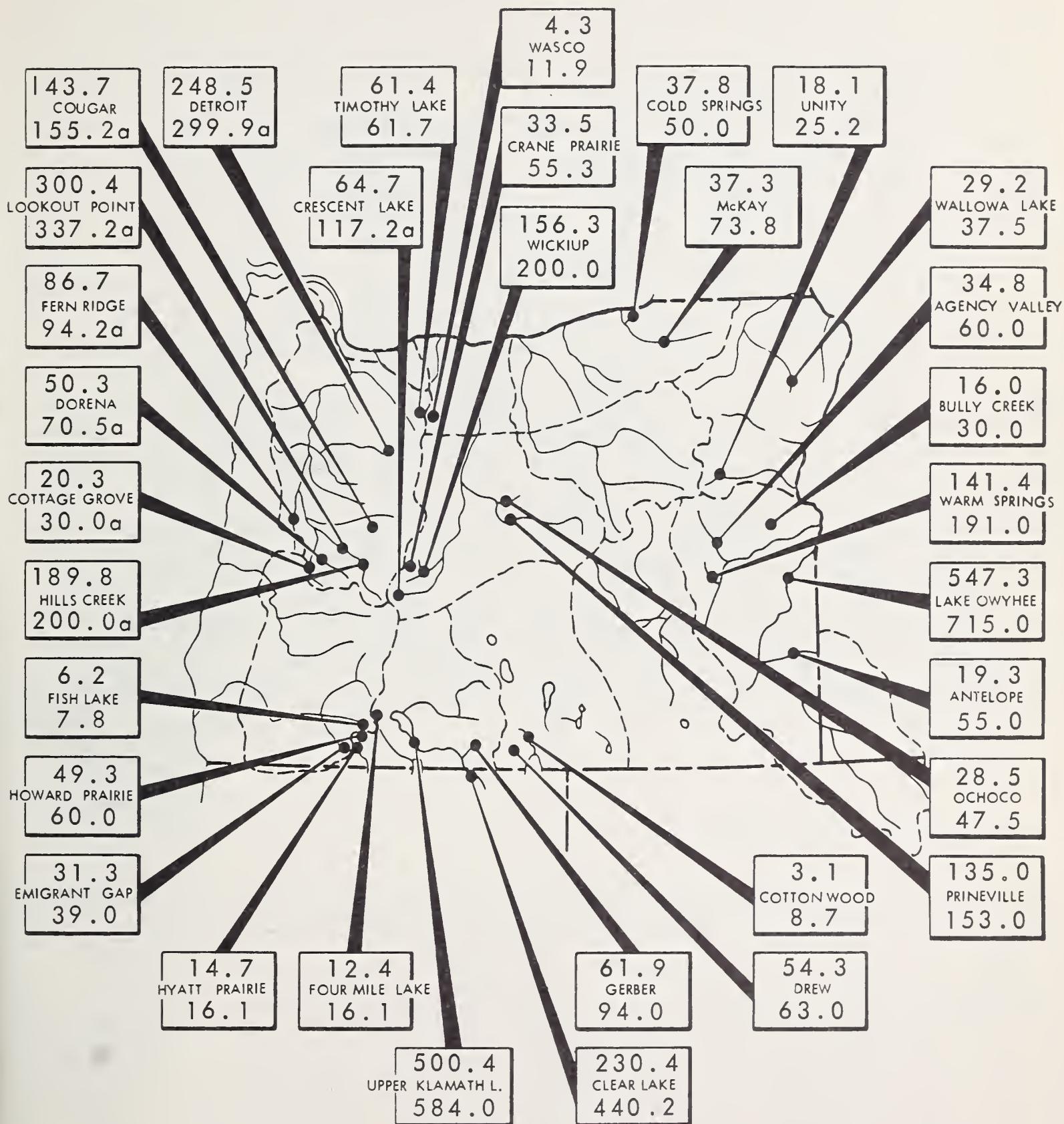
# DAILY RADIO REPORTS BY AUTOMATIC SNOW MEASURING STATION



# STORAGE STATUS of OREGON RESERVOIRS

## usable contents in thousands of acre feet

JUNE 1, 1966



### EXPLANATION

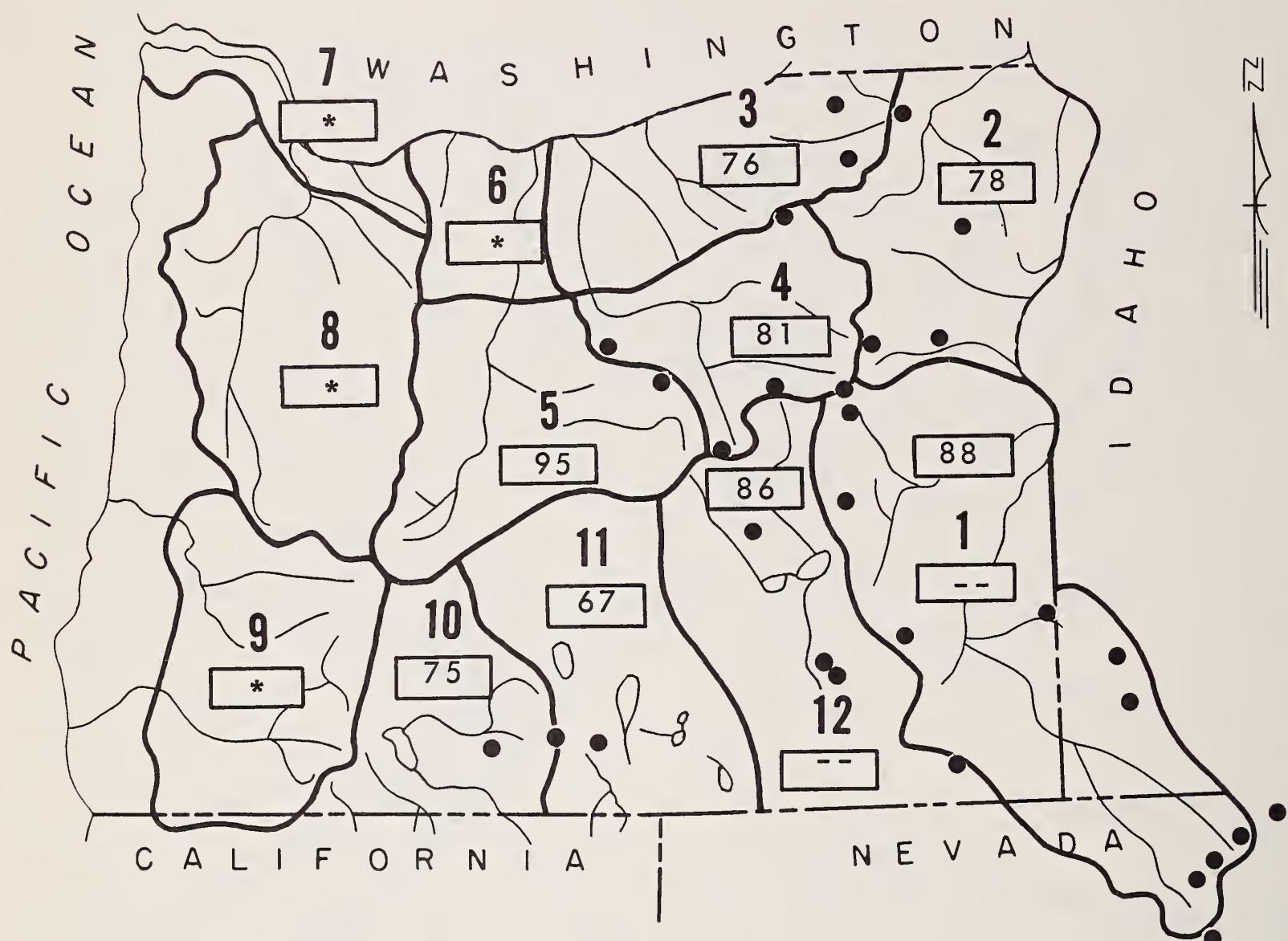
687.0	---Contents
715.0	---Capacity

(a) Multiple purpose reservoir - space reserved for flood runoff.  
N. R. - No report.

4

# MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity

JUNE 1, 1966

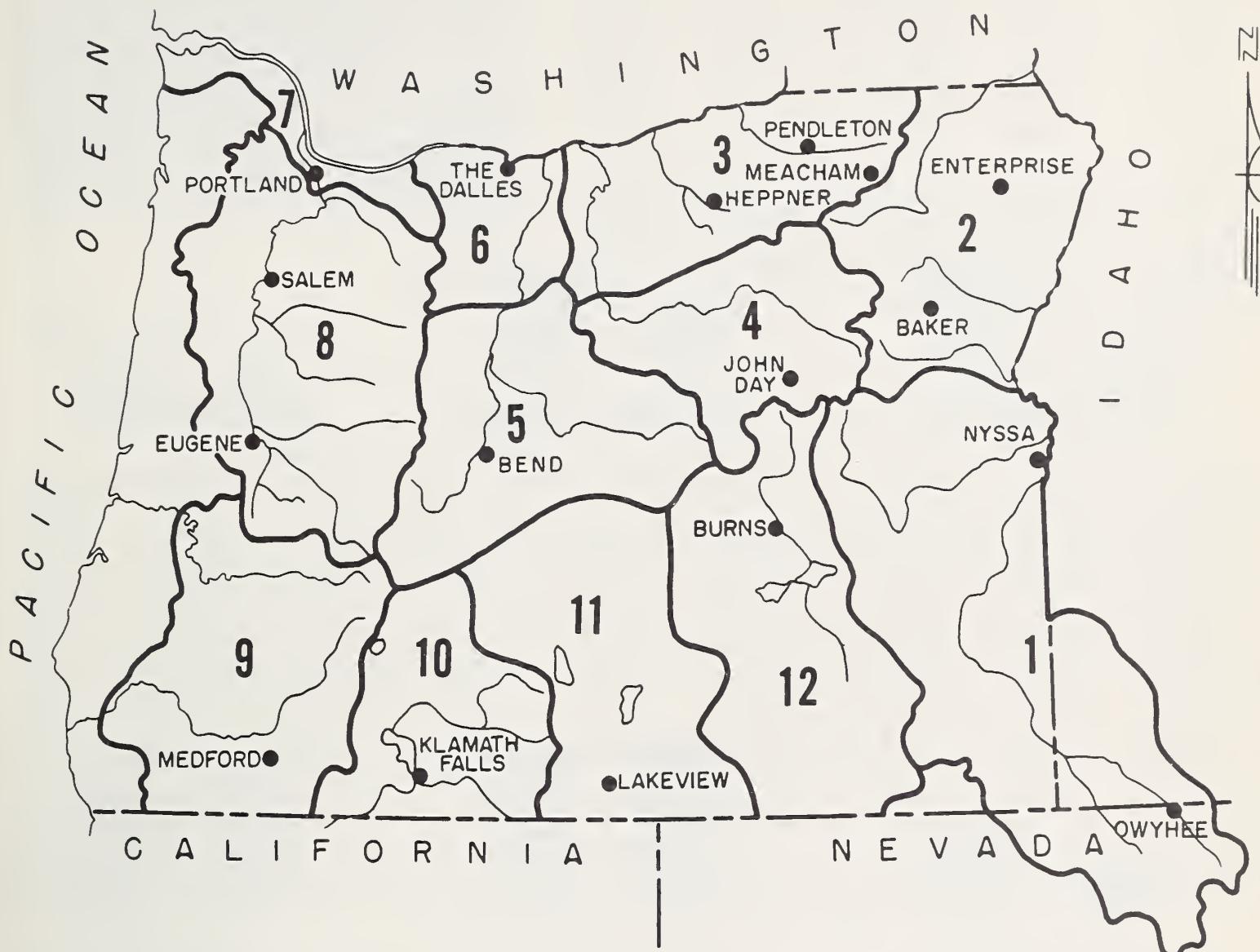


● Soil Moisture Station

\*Moisture studies not yet developed in these areas.

# VALLEY PRECIPITATION in OREGON <sup>a</sup>

JUNE 1, 1966



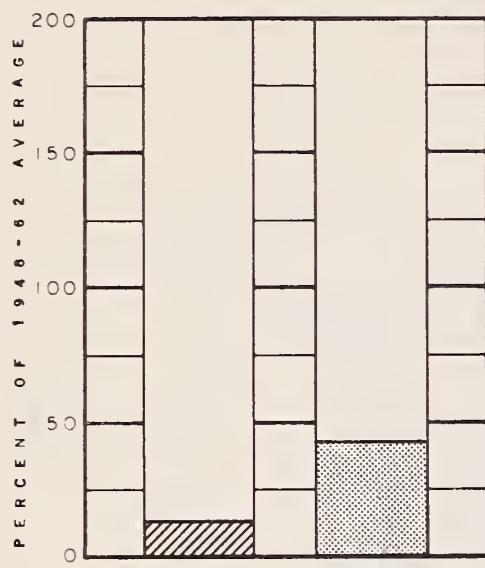
PRECIPITATION as PERCENT of the 1948-62 AVERAGE

STATION	LAST MONTH	WATER YEAR TO DATE	STATION	LAST MONTH	WATER YEAR TO DATE
BAKER APT.	12	76	LAKEVIEW	64	74
BEND	4	75	MEACHAM	43	59
BURNS	18	58	MEDFORD APT.	14	78
ENTERPRISE	11	47	NYSSA	14	57
EUGENE APT.	25	93	PENDLETON APT.	4	61
HEPPNER	12	50	PORTLAND APT.	41	89
JOHN DAY	42	50	SALEM APT.	36	87
KLAMATH FALLS APT.	22	52	THE DALLES	31	63
			OWYHEE (NEV.)	40	74

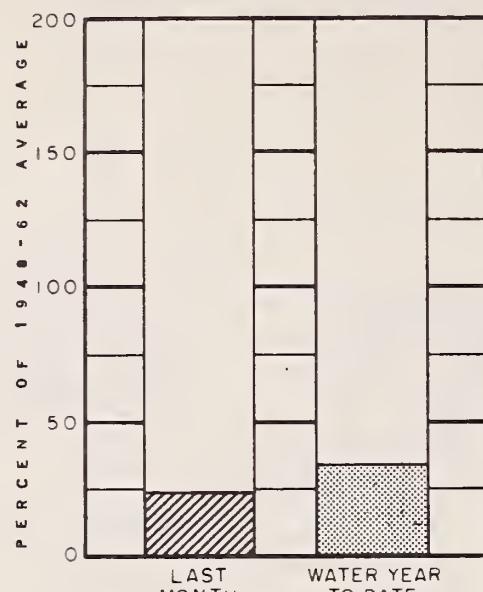
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

# CURRENT OREGON STREAMFLOW

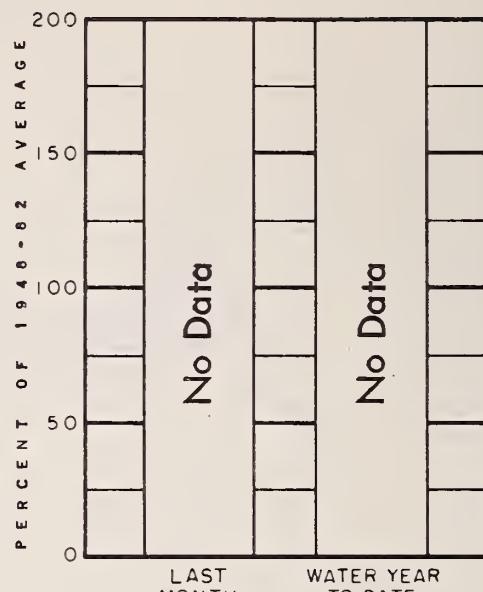
JUNE 1, 1966



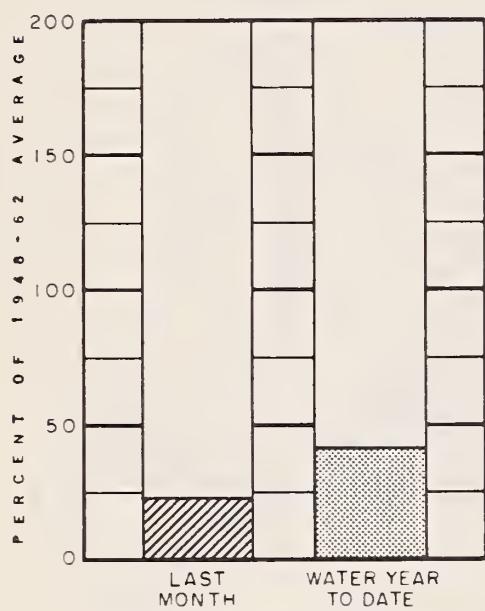
Owyhee Lake net inflow



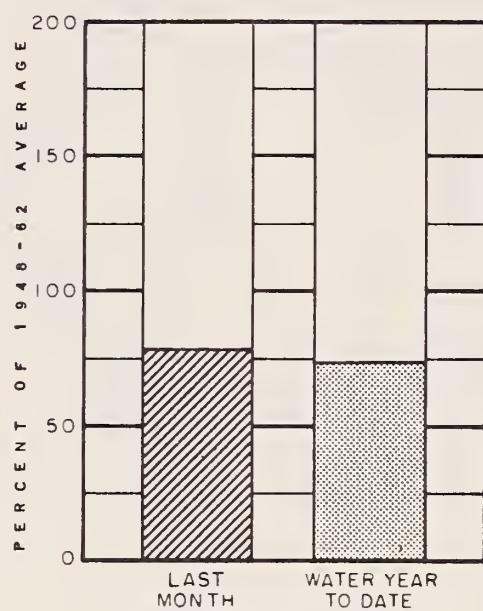
Grande Ronde at La Grande



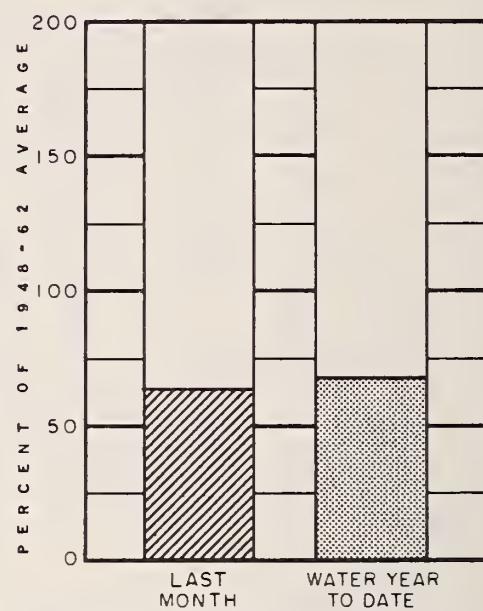
Umatilla at Pendleton



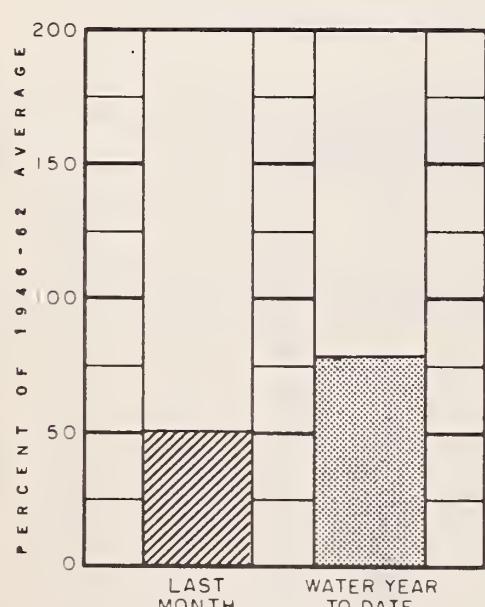
John Day at Service Creek



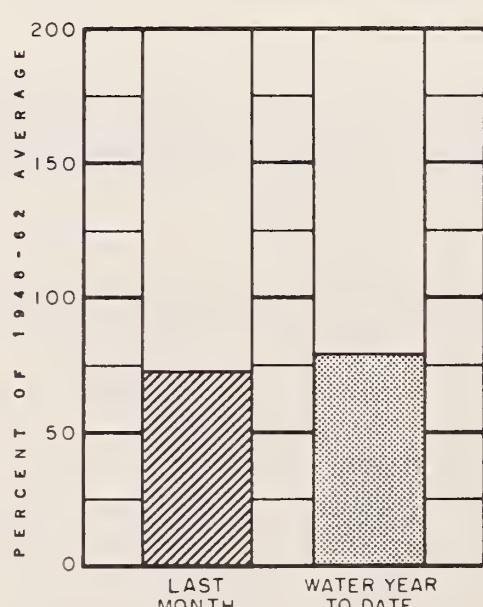
Deschutes at Moody



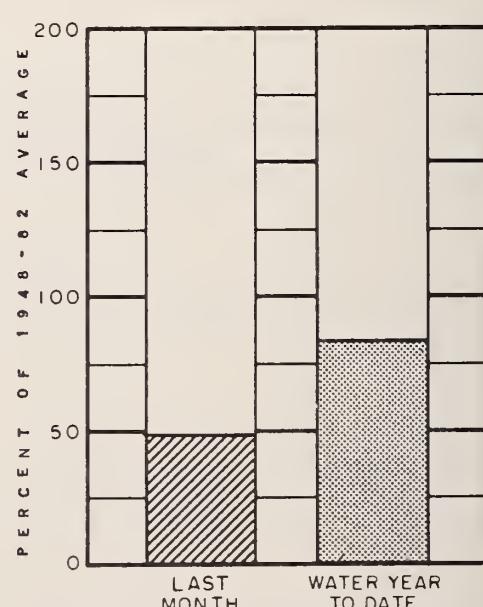
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

# WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS OREGON



*as of*  
JUNE 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

## GENERAL OUTLOOK

Water supplies have already become critically short for farmers and ranchers of Malheur County except where adequate stored water is available or where it can be pumped. Precipitation has been extremely short for the past six months and cold weather has added to the problems.

## SNOW COVER

For all practical purposes, the snowpack has completely disappeared from the watersheds of Malheur County. A few drifts remain at very high elevations.

## SOIL MOISTURE

Moisture in the soil mantle throughout the county is depleted by the cold winds and the lack of precipitation.

## RESERVOIR STORAGE

Stored water supplies provide the only bright spot in the water supply picture this year.

Jordan Valley Irrigation District had 19,300 acre feet in Antelope Reservoir - this is a short supply for usual irrigation.

Lake Owyhee held 547,320 acre feet which will provide satisfactory water for this season. There is hope for a sizable carryover supply for next year.

On the Malheur River, Warm Springs Reservoir has 141,450 acre feet in storage - the average as of June 1 is usually 124,000 acre feet. Agency Valley Reservoir has 34,800 acre feet on hand compared with an average of 50,000 acre feet. Bully Creek Reservoir had 16,000 acre feet which will help make up the shortage in Agency.

## STREAMFLOW

Net inflow\* to Lake Owyhee in May was only 15,185 acre feet or only 14 percent of average.

Forecasts of summer streamflow in Malheur County have dropped heavily again and are now in the 20 to 36 percent average category.

Inflow to Lake Owyhee, May through September, is forecast at 45,000 acre feet or 24 percent of the 1948-62 average. Flow of Jordan Creek is expected to drop to 20 percent average or 20,000 acre feet, April through July.

The Malheur near Drewsey is forecast to flow 7,500 acre feet or only 21 percent average, May through September. For the same period, the flow of the North Fork at Beulah is forecast at 13,500 acre feet or 36 percent of the average.

\*Preliminary data from North Board of Control, Nyssa, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

**WATER SUPPLY OUTLOOK** expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Past	Poor
Bully Creek	Past	Poor
Cow Creek	Past	Poor
Jordan Creek	Past	Poor
Jordan Valley Irrig. Dist.	Past	Fair
McDermitt Creek	Spring peak flows	Poor
Oregon Canyon Creek	Spring peak flows	Poor
Owyhee Project	Spring peak flows	Average
Succor Creek	Spring peak flows	Poor
Tennile Creek	Spring peak flows	Poor
Vale-Oregon Irrig. Dist.	Spring peak flows	Average
Warmsprings Irrig. Dist.	Spring peak flows	Average
Willow Creek (Reservoired)	Spring peak flows	Poor

**RESERVOIR STORAGE (1,000 Ac. Ft.)** June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Agency Valley	60.0	34.8	60.2	50.2
Antelope	55.0	19.3	55.0	35.0
Bully Creek	30.0	16.0	28.6	--
Owyhee	715.0	547.3	718.2	545.3
Warmsprings	191.0	141.4	189.0	124.1

**STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.)** as of June 1, 1966

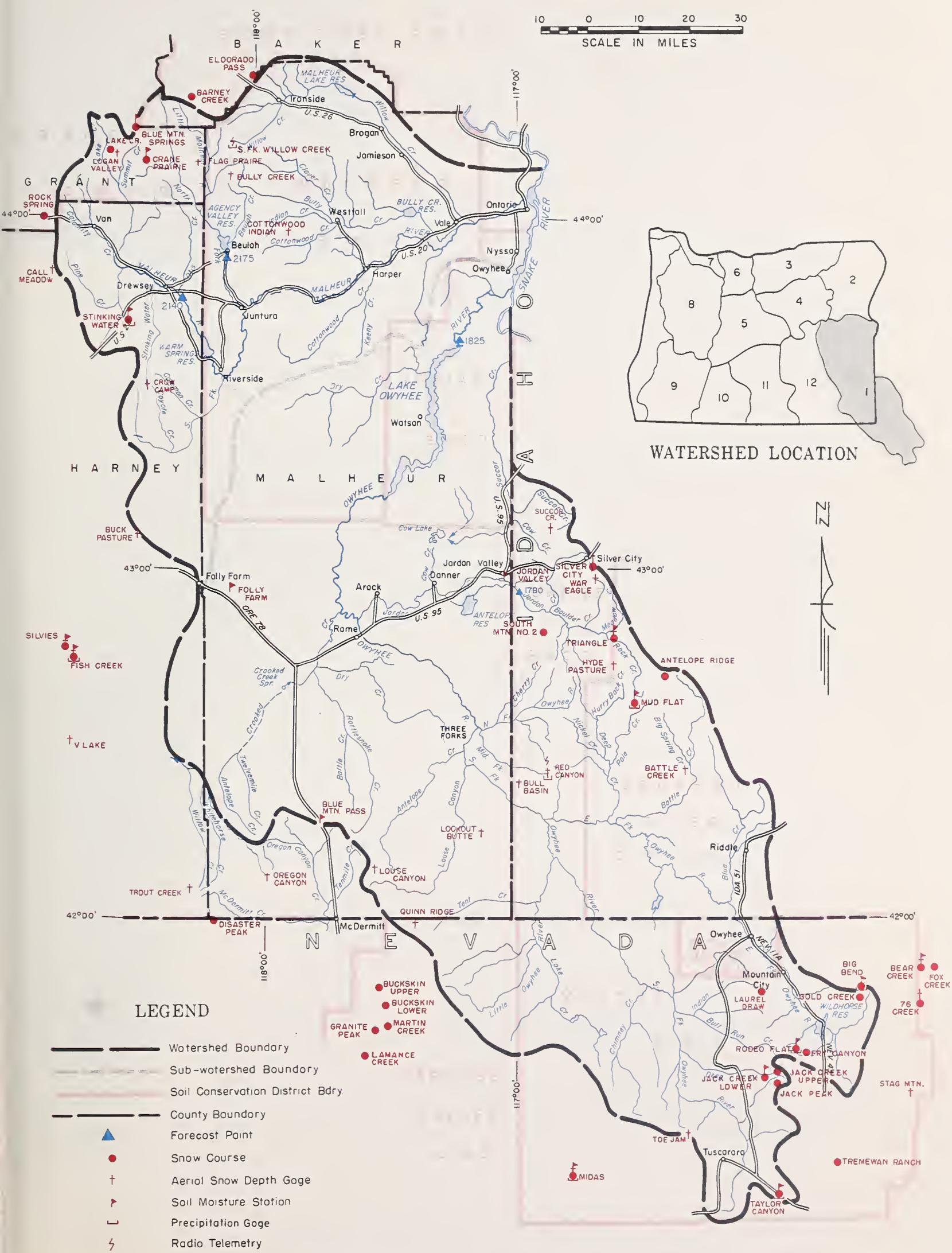
NO.	NAME	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
1780	Jordan Creek above Lone Tree Creek		20	April-July	98	20
2140	Malheur near Drewsey		7.0	May-July	34	21
			7.5	May-Sept.	35	21
2175	Malheur, North Fork at Beulah <sup>d</sup>		12.0	May-July	33	36
			13.5	May-Sept.	38	36
1825	Owyhee Reservoir net Inflow <sup>k</sup>		34	May-July	168	20
			35	May-Sept.	184	24

**SOIL MOISTURE**

STATION	PROFILE (Inches)			SOIL MOISTURE (Inches)			
	NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS	LAST
						YEAR	YEAR
Bear Creek (Nev.)	7800	72	16.8	b			
Big Bend (Nev.)	6700	48	16.7	4-28-66	16.5 <sup>f</sup>	16.7 <sup>f</sup>	16.5 <sup>f</sup>
Blue Mountain Springs	5900	42	16.9	6-2-66	11.4	13.5	12.5
Crane Prairie	5375	48	18.2	6-2-66	17.1	18.0	17.4
Folly Farm	4450	30	12.5	b			
Jack Creek, Lower (Nev.)	6800	48	8.6	5-3-66	8.1 <sup>f</sup>	8.4 <sup>f</sup>	8.4 <sup>f</sup>
Jordan Valley	4390	48	19.3	b			
Mud Flat (Ida.)	5500	48	12.8	4-29-66	14.4 <sup>f</sup>	14.2 <sup>f</sup>	- - <sup>f</sup>
Rodeo Flat (Nev.)	6800	42	11.0	5-3-66	11.0 <sup>f</sup>	11.0 <sup>f</sup>	10.8 <sup>f</sup>
Stinking Water Summit	4800	48	21.9	5-31-66	21.4	21.9 <sup>f</sup>	21.1 <sup>f</sup>
Taylor Canyon	6200	48	15.1	5-2-66	14.9	15.0 <sup>f</sup>	14.9
Triangle (Ida.)	5150	48	16.6	c			

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement. (m) Average for 5 or more years in base period.

# OWYHEE, MALHEUR WATERSHEDS





# WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

*as of*

JUNE 1, 1966

**U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER**

## GENERAL OUTLOOK

Critically short water supplies are already affecting the farmers and ranchers of Baker, Union and Wallowa Counties except where adequate stored water is available. Precipitation has been extremely short for the past two months and cold weather has added to the problems.

## SNOW COVER

Mountain snowpacks have generally disappeared except in the very high elevations of the Wallowa Mountains. Effectiveness of snowmelt to mountain late season streamflow is largely eliminated for this season.

## SOIL MOISTURE

Moisture in the soil mantle on the upper watersheds has reduced from the 82 percent of capacity recorded one month ago to 78 percent of capacity on June 1st. A year ago, moisture in the soils was up to 88 percent of their holding capacity.

## RESERVOIR STORAGE

Stored water supplies are the only really bright point in the water supply picture this year. Unity Reservoir had an inflow of about 800 acre feet during May and has only 18,132 acre feet on hand, compared with an average June 1 storage of 22,600 acre feet.

Wallowa Lake has 29,200 acre feet of water on hand compared with a June 1 average of 27,200 acre feet.

## STREAMFLOW

The flow of the Grande Ronde River at La Grande\* during May was only 18,600 acre feet or 23 percent of average. This stream, from October 1, 1965 to date, has produced only 34 percent of its average flow.

Forecasts of streamflow in northeastern Oregon have dropped seriously again and now vary from 28 percent to 64 percent of average.

Flow of Burnt River is forecast at 5,000 acre feet or 28 percent average, May through September. Powder River is forecast at 21,000 acre feet or 47 percent for the same period.

The Grande Ronde River at La Grande is forecast to flow 42,000 acre feet or 35 percent average, May through September. The average flow is 121,000 acre feet for this period. Catherine Creek is forecast to flow 27,000 acre feet or 47 percent average for this period.

The Wallowa River tributaries are forecast to flow as follows in the May-September period: Bear Creek, 56 percent; Lostine River, 61 percent; Hurricane Creek, 52 percent; and East Fork Wallowa River, 64 percent of the 15-year average (1948-62).

\* Preliminary data from U. S. Geological Survey, La Grande, Oregon.

*Report prepared by*

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

**WATER SUPPLY OUTLOOK** expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope		Fair
Baker Valley		Poor
Big Creek		Poor
Clover Cr. (nr. N. Powder)		Poor
Cove		Poor
Durkee		Poor
Eagle Valley		Poor
Elgin		Poor
Enterprise-Joseph		Average
Hereford-Bridgeport		Fair
Imnaha River		Fair
LaGrande-Island City		Poor
Lostine-Wallowa		Poor
No. Powder River-Wolf Cr.		Poor
Pine Valley		Poor
Powder River-Elk Creek		Poor
Summerville		Poor
Sumpter Valley		Poor
Union-Hot Lake		Poor
Unity		Poor

**RESERVOIR STORAGE (1,000 Ac. Ft.)** June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Unity	25.2	18.1	25.2	22.6
Wallowa Lake	37.5	29.2	32.0	27.2

**STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.)** as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE <sup>b</sup>
				1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>b</sup>	
3305	Bear near Wallowa	34	May-Sept.	61	56	
2730	Burnt near Hereford <sup>d</sup>	3.5	May-June	16.0	22	
		5.0	May-Sept.	17.8	28	
3200	Catherine near Union	27	May-Sept.	58	47	
3190	Grande Ronde at LaGrande	39	May-July	118	33	
		42	May-Sept.	121	35	
3295	Hurricane Creek near Joseph	25	April-Sept.	48	52	
2920	Imnaha at Imnaha	185	April-Sept.	318	58	
3300	Lostine near Lostine	80	April-Sept.	131	61	
2755	Powder River near Baker	20	May-July	44	45	
		21	May-Sept.	45	47	
3250	Wallowa, East Fork near Joseph <sup>d</sup>	5.7	May-July	8.8	65	
		7.2	May-Sept.	11.2	64	

**SOIL MOISTURE**

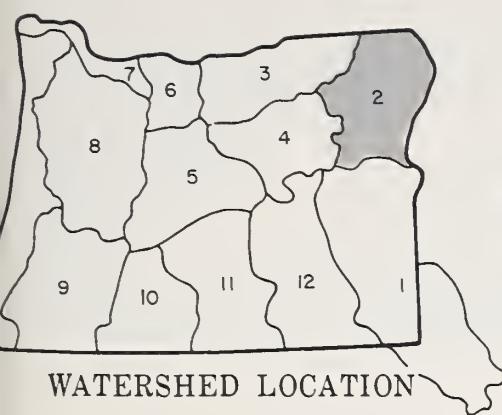
STATION NAME	ELEVATION	PROFILE (Inches)		SOIL MOISTURE (Inches)		
		DEPTH	CAPACITY	DATE	THIS	LAST
					YEAR	YEAR
Blue Mountain Summit	5100	36	16.8	5-27-66	12.3	15.5
Emigrant Springs	3925	48	22.3	6-6-66	18.0	20.8
Tollgate	5070	48	23.6	5-27-66	18.5	19.1

**SNOW**

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Tollgate	5070	5/27	0	0.0	0.0	--

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



10 0 10 20 30  
SCALE IN MILES



## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Boundary
- County Boundary
- ▲ Forecast Point
- Snow Course
- Soil Moisture Station
- + Aerial Snow Depth Gage
- △ Precipitation Gage



# WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

*as of*  
JUNE 1, 1966

**U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER**

## GENERAL OUTLOOK

Critically short precipitation and irrigation water supplies are already seriously affecting ranchers and farmers of Umatilla, Morrow, Gilliam and Sherman Counties except where adequate stored water supplies are available. Drought conditions have been worsened by unseasonable cold weather.

## SNOW COVER

Mountain snowpacks have disappeared at an unusually fast rate this year, thus reducing the likelihood of good late season streamflow. A few snowdrifts remain at very high elevations.

## SOIL MOISTURE

Moisture in the soil mantle on the upper watersheds has reduced from the 84 percent of capacity, recorded one month ago, to 76 percent of capacity on June 1st. A year ago, moisture in the soils was up to 87 percent of capacity.

## RESERVOIR STORAGE

Stored water supplies are being drafted at unusually high rates and are currently much below the average supplies available on June 1st. McKay Reservoir had only 37,270 acre feet on June 1st, and inflow to the reservoir was nearly stopped. Average storage usually on hand at this date is 67,100 acre feet. This is a very short water supply.

Cold Springs Reservoir held only 37,800 acre feet on June 1st compared with an average of 48,000 acre feet usually available. This short supply will have to be carefully used if all users are to have enough water.

## STREAMFLOW

Forecasts of streamflow for the balance of the summer season have been lowered heavily due to drought conditions and now vary from 25 to 69 percent of the 15-year average (1948-62).

Flow of the South Fork of Walla Walla River near Milton is forecast at 40,000 acre feet, May through September, or 69 percent of the average. Late season water supplies will be very poor.

Flow of the Umatilla River at Pendleton is forecast at 50,000 acre feet or 50 percent of the May-September average. A very poor water supply.

McKay Creek is forecast to flow only 3,500 acre feet, May through September, or 25 percent average compared with an average flow of 14,100 acre feet.

Butter Creek is forecast to flow only 1,200 acre feet, May through July, or 26 percent average.

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek		Poor
Butter Creek		Poor
Couse Creek		Poor
Dry Creek		Poor
Dugger Creek		Poor
Johnson Creek		Poor
McKay Creek		Poor
Mill Creek		Poor
Mud Creek		Poor
Pine Creek		Poor
Rhea Creek		Poor
Rock Creek		Poor
Umatilla R. (Cold Springs Reservoir)		Fair
Umatilla River, Main		Poor
Umatilla River (McKay Res.)		Fair
Walla Walla River, Little		Poor
Walla Walla River, Main		Poor
Walla Walla River, No. Fk.		Poor
Walla Walla River, So. Fk.		Poor
Willow Creek		Poor
Spring peak flows are past.		

# RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cold Springs Camp	50.0	37.8	49.6	48.0
McKay	73.8	37.3	72.4	67.1

# STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.) as of June 1, 1966

NO.	NAME	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD		1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
				FORECAST THIS YEAR	PERIOD		
0320	Butter Creek near Pine City		1.2	May-July		4.7	26
0225	McKay near Pilot Rock		3.5	May-Sept.		14.1	25
0200	Umatilla River near Gibbon		30	May-July		52	58
			33	May-Sept.		58	57
0210	Umatilla River at Pendleton		48	May-July		92	52
			50	May-Sept.		97	50
0100	Walla Walla, So. Fork near Milton		30	May-July		44	68
			40	May-Sept.		58	69

# SOIL MOISTURE

STATION	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION					
Athena-Weston	1700	48	18.7	5-27-66	12.4	14.3
Battle Mountain Summit	4340	48	13.8	6-6-66	10.3	13.7
Emigrant Springs	3925	48	22.3	6-6-66	18.0	20.8
Tollgate	5070	48	23.6	5-27-66	18.5	19.1

# SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)
				LAST YEAR	1948-62 AVERAGE
Blue Mountain Camp	4300	5/27	0	0.0	0.0
Tollgate	5070	5/27	0	0.0	0.0
Weston Mountain	2700	5/27	0	0.0	0.0

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

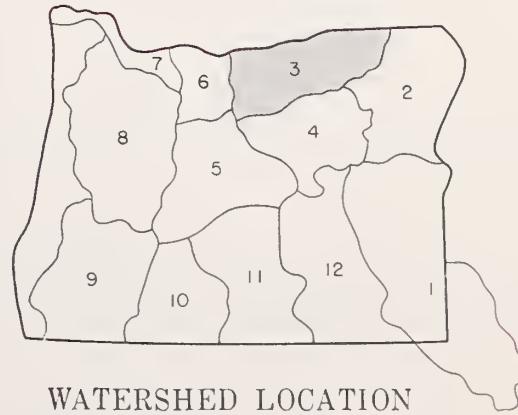
# UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30  
SCALE IN MILES



## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- Rain Moisture Station
- Precipitation Gage



WATERSHED LOCATION

Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

*as of*  
JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Critical water shortages, coupled with cold winds, have produced exceptionally poor range conditions and a likelihood of short hay crops in the John Day country.

## SNOW COVER

Mountain snowpacks have disappeared at an unusually rapid rate removing a major source of late season streamflow. A few drifts of snow remain at very high elevations.

## SOIL MOISTURE

Moisture in the soil mantle of the upper watersheds has reduced from 85 percent of capacity on May 1st to 81 percent on June 1st. A year ago, the moisture was up to 93 percent of capacity. A lot of snowmelt went into the watershed soils this year.

## STREAMFLOW

Flow of the John Day River at Service Creek\* was only 24 percent of the May average and, from October 1, 1965 to date, flow has been only 40 percent of the average for the 1948-62 period.

Forecasts of streamflow for the April through September period are 31 percent of the 15-year average for the John Day at Prairie City, 33 percent of average for the Middle Fork at Ritter, and 51 percent average for Strawberry Creek near Prairie City.

Late season water will be extremely short in all streams.

\* Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

## WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

## RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek		Poor
Beech Creek-Fox-Long Cr.		Poor
Bridge-Mountain Creeks		Poor
Camas Creek		Poor
Indian-Pine Creeks		Poor
John Day River, Main Fork		Poor
John Day River, Mid. Fork		Poor
John Day River, N. Fork		Poor
John Day River, S. Fork		Poor
Monument-Kimberly		Poor
Strawberry Creek		Poor

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE

## STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE		THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
				15	46	
0385	John Day at Prairie City	15	April-July	46	33	
		16	April-Sept.	51	31	
0440	John Day, Middle Fork at Ritter	42	April-July	127	33	
		43	April-Sept.	131	33	
0375	Strawberry near Prairie City	4.0	April-July	8.1	49	
		4.5	April-Sept.	8.8	51	

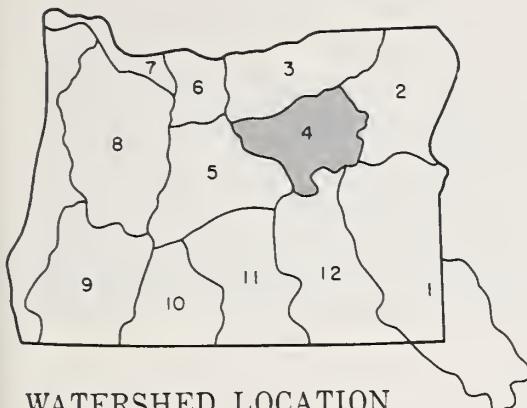
## SOIL MOISTURE

STATION NAME	PROFILE (Inches)			SOIL MOISTURE (Inches)			
	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	13.8	6-6-66	10.3	13.7	13.1
Blue Mountain Springs	5900	42	16.9	6-2-66	11.4	13.5	12.5
Blue Mountain Summit	5100	36	16.8	5-27-66	12.3	15.5	15.6
Derr	5670	24	9.0	b			
Marks Creek	4540	36	14.1	5-26-66	12.9	13.4	13.4 <sup>f</sup>
Snow Mountain	6300	48	16.7	6-6-66	16.4	16.6	14.3
Starr Ridge	5150	36	10.6	6-2-66	9.0	10.4	10.4

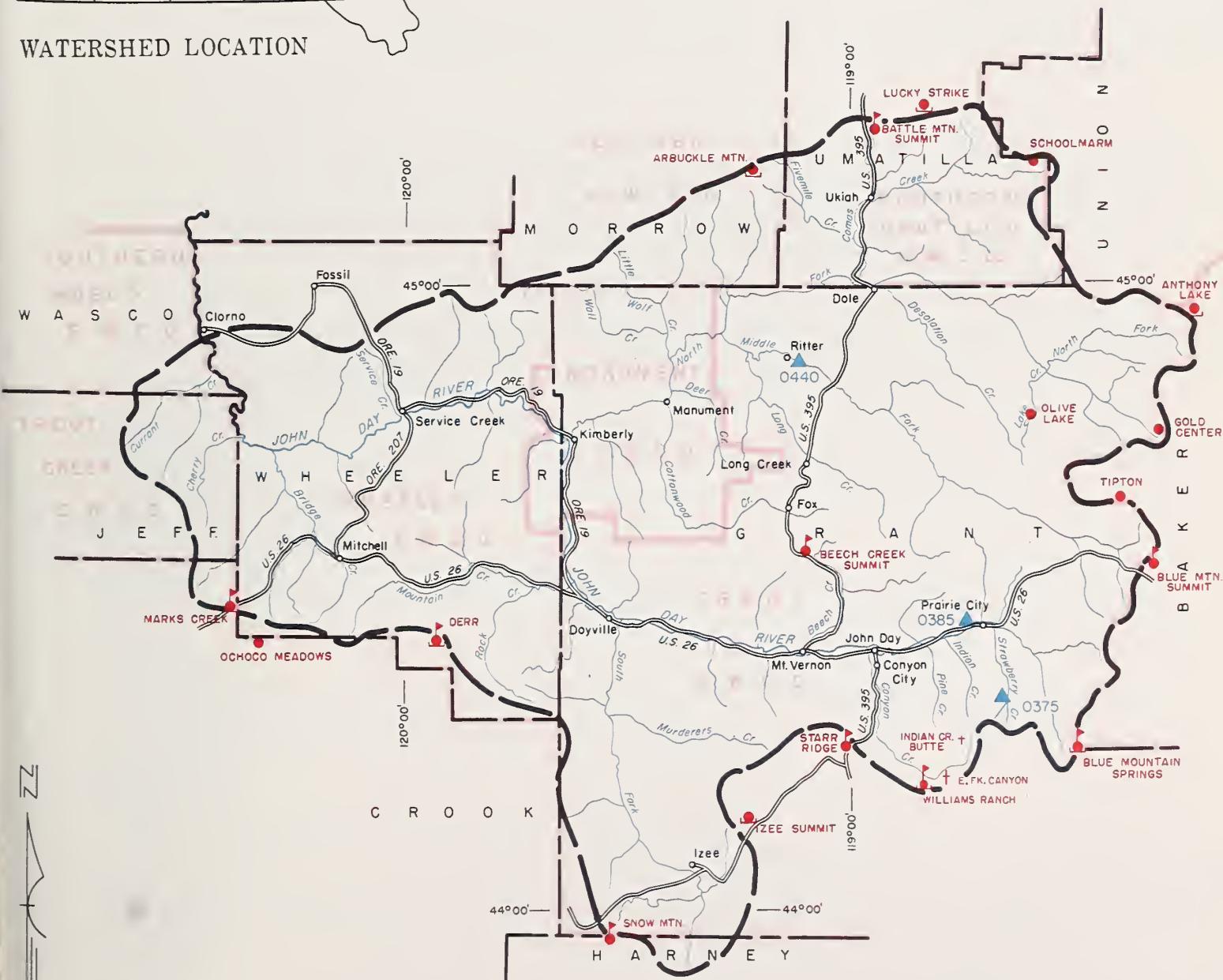
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# UPPER JOHN DAY WATERSHEDS

10 0 10 20 30  
SCALE IN MILES



WATERSHED LOCATION



## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- Soil Moisture Station
- + Aerial Snow Depth Gage
- Precipitation Gage

# Upper John Day Watersheds

*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

*as of*

JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Critical water shortages and cold weather have already plagued many farmers and ranchers in Crook and Jefferson Counties. The pinch is now beginning on some streams in Deschutes County. Water supplies are adequate for most lands served from storage facilities, but this will be at the expense of carryover supplies for next year which might also be one with critical conditions.

## SNOW COVER

Mountain snowpacks are gone in the Ochoco Mountains and remain in greatly diminished amounts in the Cascades only at high elevations. Late season streamflow, so dependent on late snowmelt, will be poor in all areas.

## SOIL MOISTURE

Moisture in the soil mantle of the upper watersheds has reduced somewhat but currently stands at 95 percent of capacity. A year ago, it stood at 97 percent.

## RESERVOIR STORAGE

The one bright spot in the water supply picture is stored water supplies. In the Crooked River country, Ochoco and Prineville Reservoirs held 28,500 and 135,000 acre feet of water on June 1st. This is a satisfactory supply for this season.

On the Deschutes watershed, Crane Prairie and Wickiup Reservoirs, at the first of the month, held 33,500 and 156,300 acre feet while Crescent Lake held 64,700 acre feet. Probably all of this water will be needed this season.

## STREAMFLOW

Flow of the Deschutes at Moody\* during May was 77 percent of the average May flow. This reflects heavy ground-water contribution.

Forecasts of flow of the Crooked River and of Ochoco Creek for the May-September period have been greatly reduced to 12 and 11 percent of the 1948-62 average. Upstream users will be very short of water.

Flow of the Little Deschutes at Lapine and inflow to Crane Prairie Reservoir are forecast at 70 and 75 percent average. The Deschutes at Benham Falls is forecast at 77 percent average for the May-September period and will probably provide less than satisfactory supplies for the North Unit Irrigation District late in the season.

Flows of Tumalo and Squaw Creeks are forecast at 78 and 77 percent average for the April through September period. Late season water will be less than desirable from these two streams.

\* Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

## WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	
Bear City	Poor	
Beaver Creek	Poor	
Camp Creek	Poor	
Central Ore. Irrig. Dist.	Average	
Crooked River	Poor	
Deschutes River	Poor	
Hay-Trout Creeks	Poor	
Lone Pine Irrig. Dist.	Average	
Mill Creek	Poor	
North Unit Irrig. Dist.	Fair	
Ochoco Creek	Poor	
Sisters Irrigation Dist.	Fair	
Snow Creek Irrig. Dist.	Fair	
Squaw Creek Irrig. Dist.	Fair	
Swalley Ditch	Excellent	
Tumalo Project	Average	
Walker Basin Irrig. Dist.	Fair	

## RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Crane Prairie	55.3	33.5	51.5	44.4
Crescent Lake	117.2*	64.7	72.5	53.5
Ochoco	47.5	28.5	45.1	39.2
Prineville	153.0	135.0	150.3	--
Wickiup	200.0	156.3	193.9	169.9

\*Includes space for 25,790 a.f. for flood storage only.

Note: Storage figures for Crescent Lake include 5,360 a.f. of known dead and inactive storage.

## STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD		1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
			FORECAST THIS YEAR	FORECAST PERIOD		
0535	Crane Prairie Reservoir total Inflow	59	May-July	79	75	
0600	Crescent at Crescent Lake <sup>d</sup>	95	May-Sept.	127	75	
0795	Crooked near Post	15.5	May-July	22	70	
		20	May-Sept.	29	69	
		5.0	May-July	46	11	
		5.5	May-Sept.	48	11	
0645	Deschutes at Benham Falls <sup>d</sup>	235	May-July	328	72	
		415	May-Sept.	541	77	
0500	Deschutes below Snow Creek	43	May-Sept.	68	63	
0630	Deschutes, Little near Lapine <sup>d</sup>	69	April-July	99	70	
		79	April-Sept.	113	70	
0848	Ochoco Reservoir net Inflow	2.0	May-Sept.	16.5	12	
0555	Odell near Crescent	23	April-Sept.	34	68	
0750	Squaw near Sisters	43	April-Sept.	56	77	
0730	Tumalo near Bend <sup>d</sup>	42	April-Sept.	54	78	

## SOIL MOISTURE

STATION NAME	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Derr	5670	24	9.0	b		
Marks Creek	4540	36	14.1	5-26-66	12.9	13.4
Snow Mountain	6300	48	16.7	6-6-66	16.4	16.6
						13.4 <sup>f</sup>
						14.3

## SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Cascade Summit	4880	5/31	0	0.0	4.7	7.8 <sup>m</sup>
Hogg Pass	4755	5/31	33	17.2	--	--
Hungry Flat	4400	5/26	0	0.0	--	--
New Dutchman Flat #2	6400	5/26	48	27.2	--	--
Tangent	5400	5/26	0	0.0	--	--

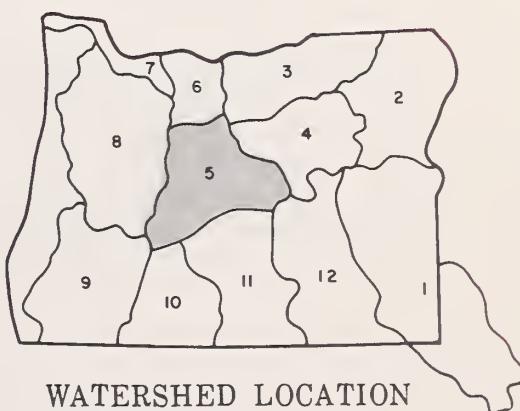
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# UPPER DESCHUTES, CROOKED WATERSHEDS

10 0 10 20 30  
SCALE IN MILES

## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Precipitation Gage



WATERSHED LOCATION

# Upper Deschutes, Crooked Watersheds

*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS OREGON

*as of*

JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Farmers of Hood River and Wasco Counties are already experiencing some squeeze in water supplies and further shortages are foreseen, especially late in the season.

## SNOW COVER

Mountain snowpacks have disappeared rapidly except at relatively high elevations. Phlox Point snow course had 66 inches of snow on May 26th with 36.2 inches of water. The average for June 1st is 45.3 inches of water.

## SOIL MOISTURE

Moisture in the soil mantle in the upper watersheds was near average in amount about a month ago but has been reduced since then by dry and cold weather conditions.

## RESERVOIR STORAGE

Stored water in Lake Wasco (Clear Lake) is reported to be 4,300 acre feet. Last year on June 1st, it was 8,500 acre feet. This is a short supply for Juniper Flat Irrigation District.

## STREAMFLOW

Flow of Hood River, West Fork near Dee, is forecast at 96,000 acre feet or 77 percent average for the May-September period. This flow will provide barely enough water for late season irrigation.

White River is forecast at 97,000 acre feet or 77 percent average for the May-September period. Users from this stream will have to "stretch" the late season water.

Mill Creek, the Mile Creeks, and others like Tygh, Badger, Rock, Gate and Threemile will have short flows this year with severe late season shortages.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

## WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch (Tony Creek)	.	Fair
Badger Creek	past	Fair
Dee Irrigation District	past	Average
East Fork Irrig. Dist.	past	Average
Farmers Irrigation Dist.	past	Average
Hood River Irrig. Dist.	past	Average
Juniper Flat	past	Fair
Middle Fork Irrig. Dist.	past	Average
Mile Creeks	past	Poor
Mill Creek	past	Poor
Mount Hood Irrig. Dist.	past	Average
Rock-Gate-Threemile Crs.	past	Fair
Tygh Creek	past	Poor
White River	past	Average

## RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Clear Lake	11.9	4.3	8.5	--

## STREAMFLOW FORECASTS<sup>a</sup> (1,000 Ac. Ft.) as of June 1, 1966

NO.	NAME	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
1210	Hood near Hood River <sup>d</sup>		170 217	May-July May-Sept.	218 278	78 78
1185	Hood, West Fork near Dee		78 96	May-July May-Sept.	101 125	77 77
1015	White below Tygh Valley		83 97	May-July May-Sept.	108 126	77 77

## SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD	
	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)
					LAST YEAR      1948-62 AVERAGE
Clear Lake	3500	5/26	0	0.0	0.0
Clear Lake (Experimental)	3500	5/26	0	0.0	0.0
Phlox Point	5600	5/26	66	36.2	24.5
Still Creek	3700	5/26	4	2.5	0.0

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

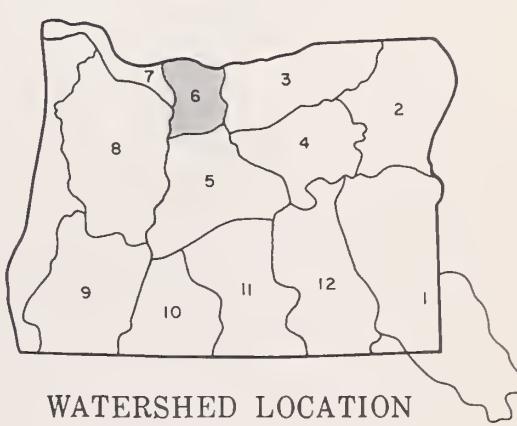
# HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

10 0 10 20  
SCALE IN MILES



## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- ↑ Aeriel Snow Depth Goge
- Soil Moisture Station
- Precipitation Gage



WATERSHED LOCATION

Hood, Mile Creeks, Lower Deschutes Watersheds

*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

*as of*

JUNE 1, 1966

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

## GENERAL OUTLOOK

The trend towards a cool, dry climate over the Columbia Basin since February 1 continued during May. Forecasts of streamflow for the snowmelt period remain near average in British Columbia, somewhat less than average inflow to Grand Coulee and among the lower 25 percent of years of record at The Dalles. Snowmelt flow for May was substantially less than anticipated because of cool temperatures and generally deficient precipitation. Flows in the upper river basin will be generally adequate to fill major power and irrigation reservoirs, but in some cases flows will be barely adequate and continued drought could possibly cause some reservoirs on tributary streams not to reach planned operating levels.

Water supplies for irrigation along the main Snake River and its tributaries will be adequate at the expense of considerable depletion in reservoir storage. Snake River tributaries, south of the main river in Idaho, and tributaries in eastern Oregon will have real shortages except for areas served by project reservoirs.

## SNOW COVER

Remaining snow cover over the basin is much below average in the United States section of the basin with the exception of high elevations in the Cascade Mountains of northern Oregon and southern Washington, where remaining snowpack is slightly below average. On the upper Columbia and upper Kootenai in Canada, snowpack is near average for this date. Present snowpack follows the pattern of 1965-66 winter snow accumulation.

## STREAMFLOW

The flow of the Columbia at The Dalles\* has been below average for the past eight months. The record from October 1, 1965 is as follows:

<u>Month</u>	<u>Percent of Average Discharge (1948-62)</u>
October	93 (Adjusted for storage)
November	95 " " "
December	87 " " "
January	92 " " "
February	70 " " "
March	87 " " "
April	86 " " "
May	74 " " "

\*Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by

HOMER J. STOCKWELL

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

511 N.W. BROADWAY, RM. 507  
PORTLAND, OREGON 97209

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

NO.	NAME	FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
		NAME	POINT				
1057	Columbia at The Dalles <sup>d</sup>			50,200 79,500	May-June May-Sept.	60,426 94,841	83 84

## HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW <sup>d</sup> (1,000 A.F.)			PEAK (1,000 c.f.s.)	DATE
	APR.— SEPT.	APR.— JUNE	MAY— JUNE		
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5
1948-62 Avg.	108,500	74,100	60,200	633	
1963	87,000	56,300	46,200	437	June 18
1964	109,020	70,739	61,313	662	June 18

## LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20 (1954)	564	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

# LOWER COLUMBIA WATERSHEDS

10 0 10 20 30  
SCALE IN MILES



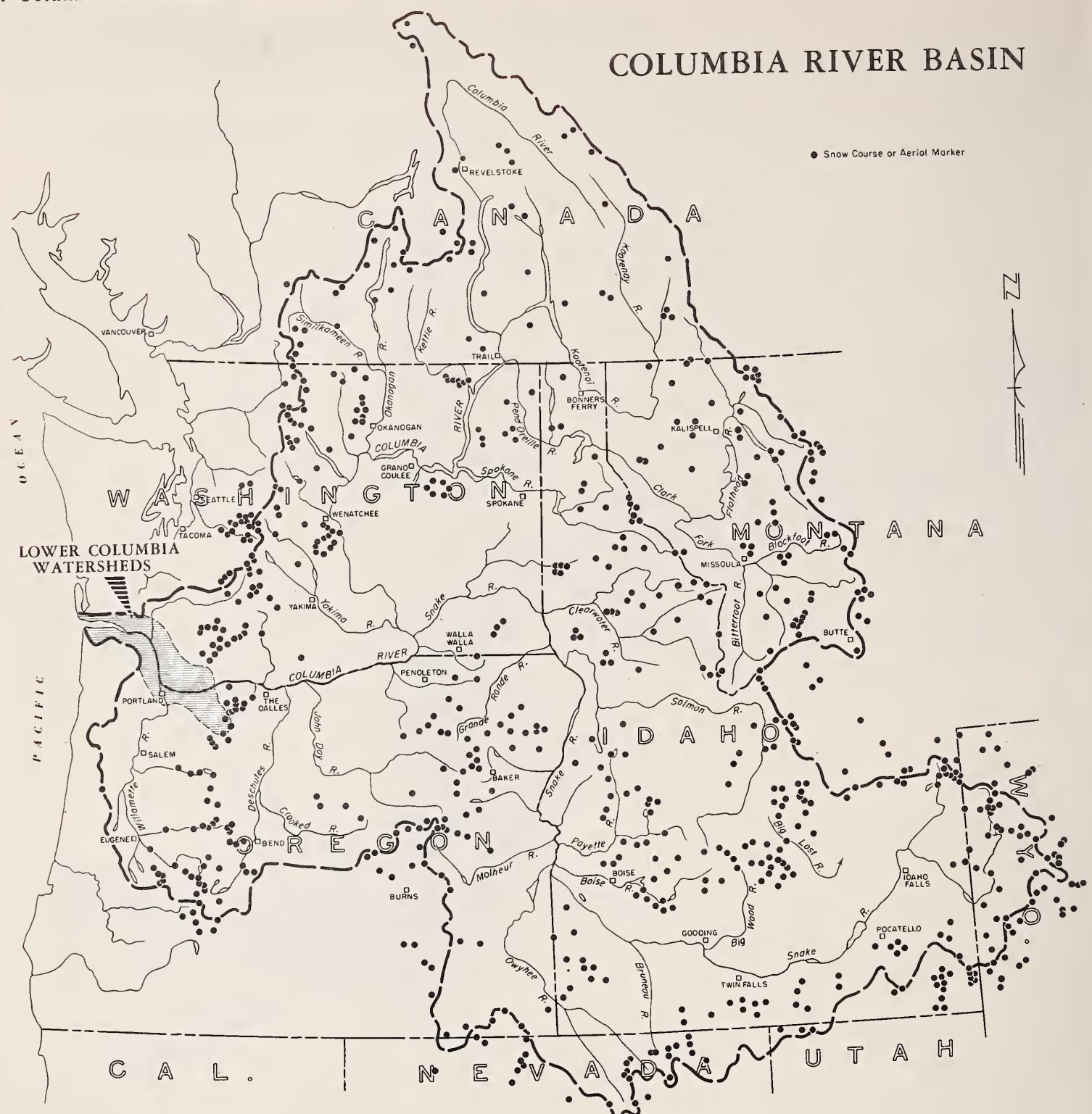
WATERSHED LOCATION

## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- (50) River Miles
- Snow Course

# Lower Columbia Watersheds

## COLUMBIA RIVER BASIN



*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

*as of*

JUNE 1, 1966

-U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

## GENERAL OUTLOOK

The summer water supply outlook in the Willamette Valley is at the lower edge of average with precipitation falling far below the usual levels. Stored water supplies are very good.

## SNOW COVER

Mountain snowpacks disappeared rapidly this year, thus erasing the major factor contributing to good late season streamflow. Snow at high elevations is about 20 to 30 percent below average.

## SOIL MOISTURE

Moisture in the soil mantle in the upper watersheds was nearly average but has reduced due to drought conditions of the past two months.

## RESERVOIR STORAGE

Timothy Lake Reservoir on the upper Clackamas is essentially full.

Total water stored in eight multipurpose reservoirs on the Willamette is 98 percent of the June 1, 15-year average (1948-62) and 99 percent of last year on this date.

## STREAMFLOW

Flow of the Middle Fork of the Willamette below North Fork\* during May was 62 percent of the 15-year average. Since October 1, 1965, this stream has produced 66 percent of the average flow for this period.

Flow of the Willamette River at Salem is forecast at 4,010,000 acre feet or 72 percent average for the period, April through September.

Forecasts of the expected flow, April through September, of tributaries of the Willamette are as follows:

Clackamas River at Estacada	77	percent average
North Santiam at Mehama	80	" "
South Santiam at Waterloo	72	" "
McKenzie near Vida	78	" "
Middle Fork below North Fork	79	" "
Row River near Dorena	78	" "

\* Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya		Average
Clackamas		Average
McKenzie		Average
Molalla		Average
Santiam, North		Average
Santiam, South		Fair
Willamette, Coast Fork		Average
Willamette, Middle Fork		Average

Spring peak flows  
are past.

# RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottage Grove	30.0*	20.3	26.2	28.7
Cougar	155.2*	143.7	144.4	--
Detroit	299.9*	248.5	285.0	268.2 <sup>m</sup>
Dorena	70.5*	50.3	61.6	64.8 <sup>m</sup>
Fall Creek	115.0*	99.0	--	--
Fern Ridge	94.2*	86.7	59.6	90.9
Hills Creek	200.0*	189.8	194.3	--
Lookout Point	337.2*	300.4	282.8	296.0 <sup>m</sup>
Timothy Lake	61.7	61.4	61.6	58.9 <sup>m</sup>

\*Multiple purpose reservoir--space reserved primarily for flood runoff.

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
2080	Clackamas at Big Bottom	115 140	April-July April-Sept.	150 184	77 76
2100	Clackamas at Estacada	590 685	April-July April-Sept.	770 890	77 77
2095	Clackamas above Three Lynx	450 525	April-July April-Sept.	584 683	77 77
1590	McKenzie at McKenzie Bridge	375 495	April-July April-Sept.	502 658	75 75
1625	McKenzie near Vida	900 1085	April-July April-Sept.	1144 1392	79 78
2090	Oak Grove Fork above Power Intake	115 150	April-July April-Sept.	147 190	78 79
1545	Rox near Dorena	85 87	April-July April-Sept.	108 112	79 78
1830	Santiam, North at Mehama <sup>d</sup>	710 790	April-July April-Sept.	884 991	80 80
1875	Santiam, South at Waterloo	460 485	April-July April-Sept.	637 675	72 72
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge <sup>d</sup>	675 765	April-July April-Sept.	863 968	78 79
1910	Willamette at Salem <sup>d</sup>	3650 4010	April-July April-Sept.	5040 5566	72 72

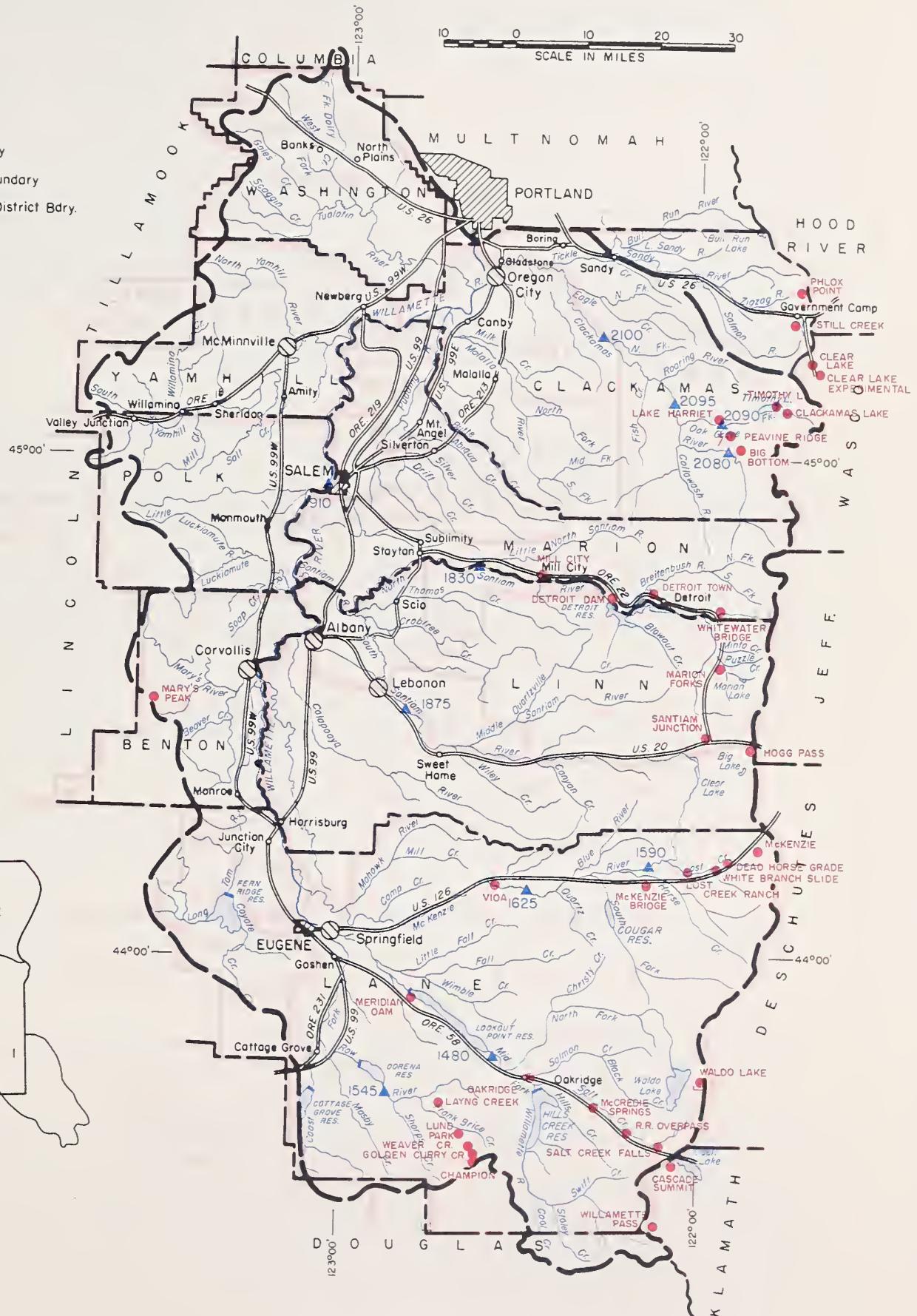
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# WILLAMETTE WATERSHEDS

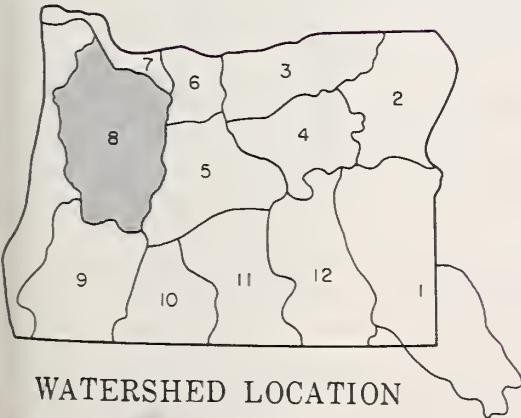
10 0 10 20 30  
SCALE IN MILES

## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ◆ Radio Telemetry



## WATERSHED LOCATION



# Willamette Watersheds

## SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR
Cascade Summit	4880	5/31	0	0.0	4.7	7.8 <sup>m</sup>
Clear Lake	3500	5/26	0	0.0	0.0	--
Clear Lake (Experimental)	3500	5/26	0	0.0	0.0	--
Detroit Town	1610	5/31	0	0.0	--	--
Detroit Dam	1580	5/31	0	0.0	--	--
Hogg Pass	4755	5/31	33	17.2	--	--
Marion Forks	2730	5/31	0	0.0	--	--
McCredie Springs	2120	5/31	0	0.0	0.0	--
Meridian Dam	750	5/31	0	0.0	0.0	--
Mill City	826	5/31	0	0.0	--	--
Oakridge	1310	5/31	0	0.0	0.0	--
Phlox Point	5600	5/26	66	36.2	24.5	45.3 <sup>m</sup>
Salt Creek Falls	4000	5/31	0	0.0	0.0	--
Santiam Junction	3990	5/31	0	0.0	--	--
Still Creek	3700	5/26	4	2.5	0.0	0.9
Whitewater Bridge	2175	5/31	0	0.0	--	--

RADIO REPORTS BY AUTOMATIC SNOW-MEASURING STATIONS				
			Time	
Peavine Ridge	3500	5/31	8:38 a.m.	0.0
Phlox Point	5600	5/31	8:57 a.m.	43.6



# WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS OREGON

*as of*

JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Summer water supplies in the Umpqua-Rogue area are now expected to be somewhat below average, but water users should squeeze by if they use good water management. Stored water supplies are good.

## SNOW COVER

Mountain snowpacks were excellent earlier in the season but a very rapid and continuous snowmelt removed all but the highest elevation packs, which are now too little to be effective in bolstering the late-season runoff which will now be relatively short.

## SOIL MOISTURE

Moisture in the soil mantle on upper watershed areas was near capacity a month ago but has been greatly reduced by cold winds and lack of precipitation.

## RESERVOIR STORAGE

Stored water supplies, available to the Medford and Rogue River Valley Irrigation Districts in Fourmile and Fish Lakes, totals 18,600 acre feet or 94 percent of the average storage on June 1st.

Talent Irrigation District has a total of 95,300 acre feet of water stored in Howard Prairie, Hyatt Prairie and Emigrant Gap Reservoirs. This is 87 percent of the average which is 109,900 acre feet.

## STREAMFLOW

Rogue River at Raygold\* flowed 71 percent of the May average last month and since October 1 of 1965, has produced 77 percent of the average flow for that period.

Forecasts of streamflow on the North Umpqua below Lemolo Reservoir indicate an expected flow, April through September, 75 percent average.

In the Rogue area, the Applegate is forecast to flow 102 percent average and the Illinois 95 percent average, April through September. Rogue above Prospect, Rogue below South Fork and Rogue at Raygold are forecast at 81, 78 and 78 percent average, respectively, for the period, May through September.

Eagle Point Irrigation District will have a tight squeeze with this year's water supply.

Grants Pass Irrigation District will probably have some canal rotation near the end of their irrigation season.

\* Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Spring peak flows are past.	Average
Applegate River, Big		Average
Applegate River, Little		Average
Ashland Creek		Average
Butte Creek, Little		Average
Butte Creek, Big		Average
Cow Creek		Average
Deer Creek		Average
Elk Creek		Average
Emigrant Creek (abv. Res.)		Average
Evans Creek		Average
Gold Hill Irrigation Dist.		Average
Grants Pass Irrig. Dist.		Average
Grave Creek		Average
Illinois River, East Fork		Average
Illinois River, West Fork		Average
Jump-off Joe Creek		Average
Neil Creek		Average
Red Blanket Creek		Average
Rogue River		Average
Sucker Creek		Average
Table Rock Irrig. Dist.		Average
Thompson Creek		Average
Wagner Creek		Average
Williams Creek		Average

# RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Emigrant Gap	39.0	31.3	35.8	35.9*
Fish Lake	7.8	6.2	7.9	7.0
Fourmile Lake	16.1	12.4	16.3	12.8
Howard Prairie	60.0	49.3	60.5	--
Hyatt Prairie	16.1	14.7	16.3	14.0

\*Average for years  
of record after  
reconstruction.

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

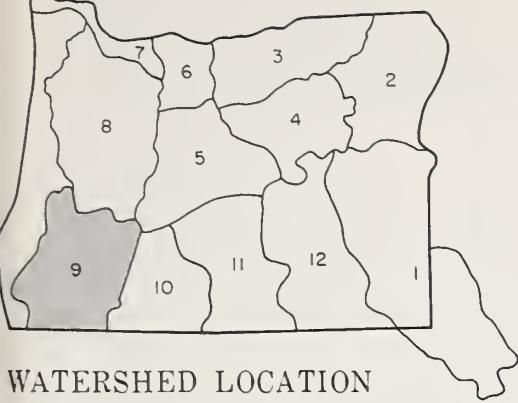
NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
					1948-62 AVERAGE
3620	Applegate near Copper	145	April-Sept.	142	102
3145	Clearwater above Trap Creek <sup>d</sup>	50	May-Sept.	62	81
5045	Fourmile Lake net Inflow <sup>d</sup>	5.0	April-Sept.	6.6	76
5140	Hyatt Reservoir net Inflow <sup>d</sup>	2.6	May-Sept.	3.4	76
3770	Illinois River at Kerby	195	April-July	206	95
		200	April-Sept.	212	94
3425	Little Butte, N. Fk. at Fish Lk. nr. Lake Cr. <sup>d</sup>	13.5	April-Sept.	16.0	84
3415	Little Butte, So. Fk. nr. Lake Creek	32	April-July	38	84
3280	Rogue above Prospect	170	May-July	212	80
		220	May-Sept.	272	81
3320	Rogue, South Fork near Prospect <sup>d</sup>	40	May-July	52	77
		50	May-Sept.	64	78
3350	Rogue River below South Fork	345	May-July	443	78
		460	May-Sept.	586	78
3590	Rogue at Raygold near Central Point	440	May-July	567	78
		570	May-Sept.	730	78
3615	Rogue at Grants Pass	540	May-Sept.	700	77
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls <sup>d</sup>	140	April-Sept.	186	75

# SNOW

SNOW COURSE	CURRENT INFORMATION			PAST RECORD		
	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	LAST YEAR	1948-62 AVERAGE
Billie Creek Divide	5/31	0	0.0	--	--	--
Cold Springs Camp	5/23	3	1.4	--	--	--
Diamond-Crater Summit	5/24	15	7.8	--	--	--
Diamond Lake	5/24	2	0.8	--	--	--
Red Butte #1	5/27	0	0.0	0.0	--	--
Red Butte #2	5/27	0	0.0	0.0	--	--
Red Butte #3	5/27	0	0.0	0.0	--	--
Red Butte #4	5/27	0	0.0	0.0	--	--
Red Butte #5	5/27	0	0.0	0.0	--	--
Red Butte #6	5/27	0	0.0	0.0	--	--

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# ROGUE, UMPQUA WATERSHEDS



10 0 10 20 30  
SCALE IN MILES

WATERSHED LOCATION



## LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- Precipitation Gage

# Rogue, Umpqua Watersheds

*"The Conservation of Water begins with the Snow Survey"*

# WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

*as of*

JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Farmers and ranchers in Klamath Basin, who are without stored water supplies, can expect a lean irrigation season. All lands served normally from reservoirs will have a good season.

## SNOW COVER

Mountain snowpacks have all disappeared. Snowdrifts at high elevations are all that remain of once excellent snow cover. Late-season runoff, highly dependent on the melt of late-season snow, will be greatly reduced this year.

## SOIL MOISTURE

Moisture in the soil mantle on upper watershed areas has been reduced by drought conditions to 75 percent of capacity compared with 89 percent a year ago on June 1st.

## RESERVOIR STORAGE

Stored water supplies will again "save the day" for most Klamath irrigators but heavy use of stored water will reduce the carryover amount for next season.

Gerber and Clear Lakes contain 61,900 acre feet and 230,400 acre feet, respectively, and are about average at this date.

Upper Klamath Lake has a satisfactory supply with 500,400 acre feet in storage although this is about 40,000 acre feet less than last year or the average.

## STREAMFLOW

Inflow to Upper Klamath Lake\* during May was 48 percent of the average for that month. Flow since October 1, 1965 was 82 percent average.

Forecast inflow to Gerber and Clear Lake Reservoirs for the May through September period is very low, about 23 percent average.

Inflow to Klamath Lake is forecast at 255,000 acre feet or 58 percent of the average for May-September.

\*Preliminary data from Pacific Power and Light Company, Portland, Oregon.

*Report prepared by*

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley		Fair
Lost River (Clear Lake)		Average
Lost River (Gerber)		Average
Lost River (Willow Res.)		Fair
Sprague River		Fair
Upper Klamath Lake		Average
Williamson River		Fair

# RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Clear Lake	440.2	230.4	286.5	249.2
Gerber	94.0	61.9	80.5	56.7
Upper Klamath Lake	584.0	500.4	543.9	541.4

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
823	Clear Lake Reservoir Inflow <sup>k</sup>	4.0	May-Sept.	17.4	23
8215	Gerber Reservoir Inflow <sup>k</sup>	1.5	May-Sept.	6.2	24
5010	Sprague near Chiloquin	110	May-Sept.	190	58
5070	Upper Klamath Lake net Inflow <sup>k</sup>	255	May-Sept.	438	58
5025	Williamson below Sprague River	195	May-Sept.	336	60

# SOIL MOISTURE

STATION NAME	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	5-31-66	10.5	12.5 <sup>f</sup>

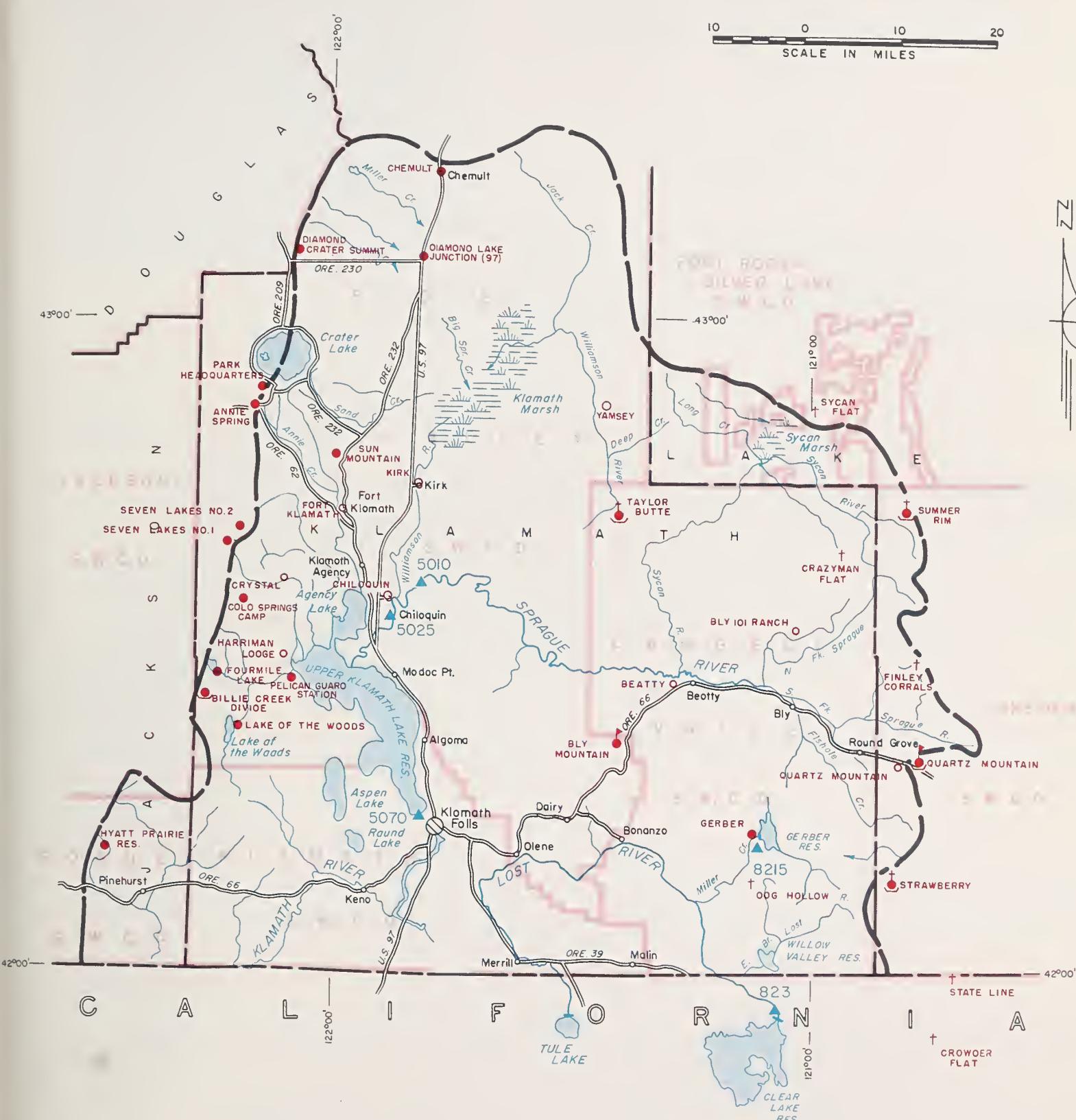
# SNOW

SNOW COURSE NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	CURRENT INFORMATION		PAST RECORD	
					LAST YEAR	1948-62 AVERAGE		
Billie Creek Divide	5300	5/31	0	0.0	--	--	--	--
Cold Springs Camp	6100	5/23	3	1.4	--	--	--	--
Diamond-Crater Summit	5800	5/24	15	7.8	--	--	--	--
Diamond Lake Junction (97)	4600	5/24	0	0.0	--	--	--	--
Quartz Mountain	5320	5/31	0	0.0	--	--	--	--
Quartz Mountain (PP&L)	5504	5/31	0	0.0	--	--	--	--
Sun Mountain	5350	5/24	1	0.5	--	--	--	--

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

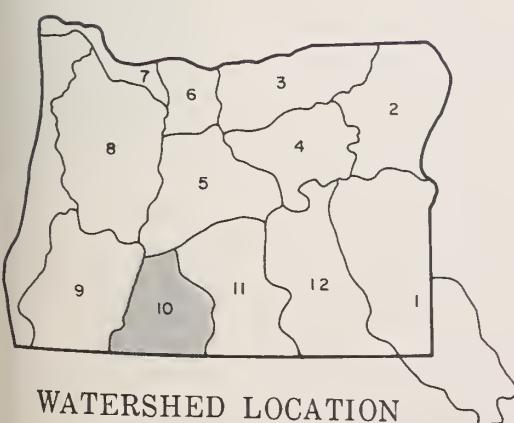
# KLAMATH WATERSHEDS

10 0 10 20  
SCALE IN MILES



## LEGEND

— — — — —	Watershed Boundary
— — — — —	Sub-watershed Boundary
— — — — —	Soil Conservation District Bdry
— — — — —	County Boundary
▲	Forecast Point
●	Snow Course
†	Aerial Snow Depth Gage
○	COPCO Snow Station
■	Soil Moisture Station
▼	Precipitation Gage



WATERSHED LOCATION





# WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

*as of*  
JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Lake County ranchers can expect water supplies to be still more critical except where they can draw on reservoir storage to supplement their irrigations. Drought conditions appear to be continuing.

## SNOW COVER

Mountain snowpacks disappeared mostly two months ago. Late-season streamflow, always boosted by late snowmelt, will be nearly nonexistent this summer.

## SOIL MOISTURE

Moisture in the soil mantle in the upper watershed areas has been very poor and is reduced from the wettest point at 74 percent, down to 67 percent of capacity as of June 1st.

## RESERVOIR STORAGE

Most stock ponds are reported empty, but Cottonwood and Drews Valley Reservoirs have a total of 57,400 acre feet in storage on June 1st. This is about the average available storage for Lakeview Water Users and will mean a good irrigation season for them. All other lands will be very short of water.

## STREAMFLOW

Forecasts of streamflow are greatly reduced and vary from 30 to 51 percent of the 15-year average (1948-62) as follows:

Drews Reservoir inflow	44 percent average
Twentymile Creek near Adel	30 "
Honey Creek near Plush	35 "
Deep Creek above Adel	49 "
Chewaucan near Paisley	51 "

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE  
1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan		Poor
Crooked		Poor
Deep Creek		Poor
Dry Creek		Poor
East Side Goose Lake		Poor
Guano Lake		Poor
Honey Creek		Poor
Lakeview Water Users Assn.		Average
Rock Creek (Hart Mtn.)		Poor
Silver-Buck Creeks		Poor
Summer Lake		Poor
Thomas Creek		Poor
Twentymile Creek		Poor
Warner Lakes		Poor

# RESERVOIR STORAGE (1,000 Ac. Ft.)

June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE
Cottonwood	8.7	3.1	7.9	6.9*
Drews	63.0	54.3	62.7	52.5

\*Average for years  
of record after  
reconstruction.

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE	
					i	j
3840	Chewaucan near Paisley	40	April-June	79	51	
		45	April-Sept.	88	51	
3715	Deep above Adel	33	April-June	68	48	
		35	April-Sept.	72	49	
3385	Drews Reservoir net Inflow <sup>d</sup>	5.0	May-Sept.	11.4	44	
3785	Honey near Plush	5.5	April-June	15.6	35	
		5.6	April-Sept.	16.1	35	
3660	Twentymile near Adel	6.3	April-June	21	30	
		6.6	April-Sept.	22	30	

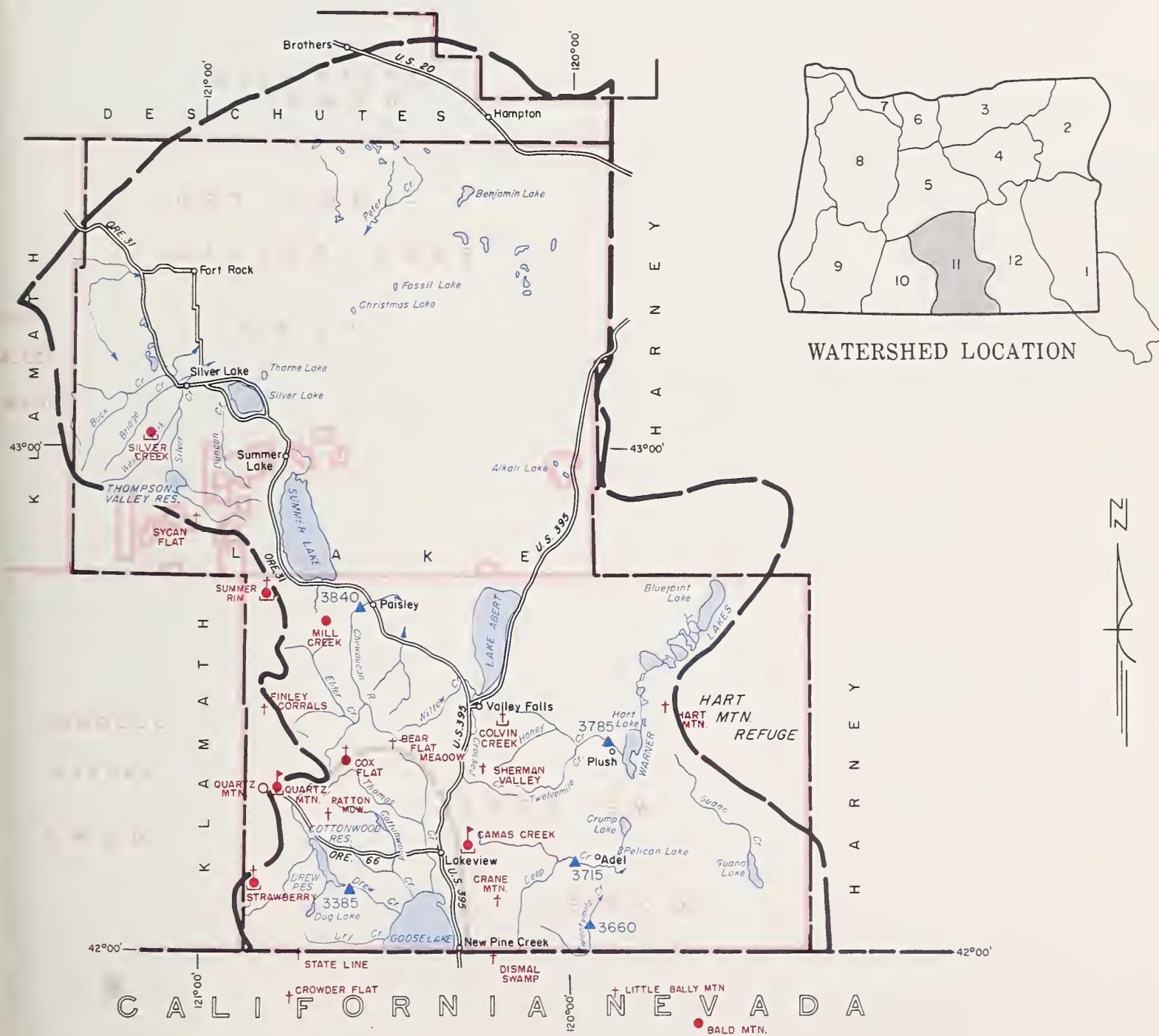
# SOIL MOISTURE

STATION NAME	ELEVATION	PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	5-27-66	11.2	12.8	12.8
Quartz Mountain	5320	48	15.3	5-31-66	8.9	10.2	9.3

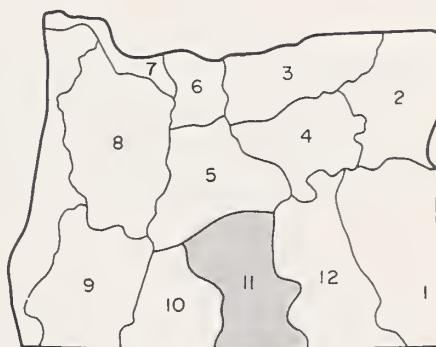
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# LAKE COUNTY, GOOSE LAKE WATERSHEDS

10 0 10 20 30  
SCALE IN MILES



WATERSHED LOCATION



## LEGEND

— — — — —	Watershed Boundary
— — — — —	Sub-watershed Boundary
— — — — —	Soil Conservation District Bdry.
— — — — —	County Boundary
▲	Forecast Point
●	Snow Course
†	Aerial Snow Depth Gage
○	COPCO Snow Station
■	Soil Moisture Station
↑	Precipitation Gage

# Lake County, Goose Lake Watersheds

*"The Conservation of Water begins with the Snow Survey"*



# WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

*as of*

JUNE 1, 1966

---

U. S. D. A. SOIL CONSERVATION SERVICE  
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

---

## GENERAL OUTLOOK

Ranchers of Harney County are not strangers to critical water supply conditions and this summer is another bad one. The drought and cold winds seem to have brought conditions which are rightfully considered to be nearly as bad as in the 30's.

## SNOW COVER

Mountain snowpacks disappeared long ago and these are the backbone of streamflow in Harney Basin.

## SOIL MOISTURE

Moisture in the soil mantle in upper watershed areas has been reduced from its wettest condition this year and is now about 86 percent of capacity. Range conditions are poor, and the outlook for hay is also very poor.

## RESERVOIR STORAGE

Most stock ponds are nearly dry. Chickahoming Reservoir is likely to be down to dead storage soon.

## STREAMFLOW

Many small streams in Harney County were reported to have completed their flow as early as the first two weeks of April.

Forecasts of streamflow for the April-September period have been reduced again and now range at about 30 percent of average.

The Silvies is forecast at 32 percent, Silver Creek at 33, the Donner und Blitzen at 32 and Trout Creek near Denio at 32 percent of the 15-year average (1948-62).

Report prepared by

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

# WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"  
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley		Poor
Cow Creek		Poor
Donner und Blitzen River		Poor
Mill-Coffeepot Creeks		Poor
Rattlesnake Creek		Poor
Silver Creek		Poor
Silvies River		Poor
Soldier-Prather Creek		Poor
Trout Creek		Poor
Whitehorse Creek		Poor

# RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1966

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1948-62 AVERAGE

# STREAMFLOW FORECASTS<sup>a</sup>(1,000 Ac. Ft.) as of June 1, 1966

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1948-62 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE <sup>i</sup>
3960	Donner und Blitzen near Frenchglen	17.0 20.0	April-June April-Sept.	52 62	33 32
4030	Silver near Riley	7.3	April-July	22	33
3935	Silvies near Burns	30 32	April-June April-Sept.	96 99	31 32
4065	Trout near Denio	2.4 2.7	April-June April-Sept.	7.4 8.4	32 32

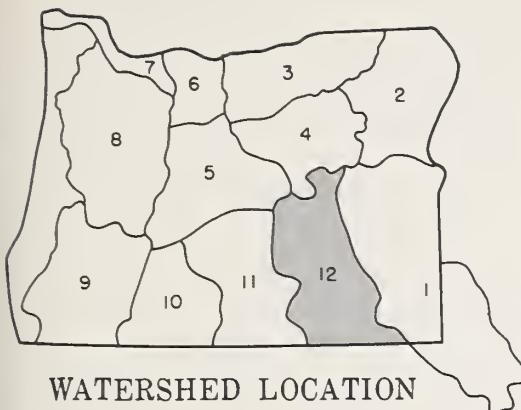
# SOIL MOISTURE

STATION NAME	PROFILE (Inches)		SOIL MOISTURE (Inches)			
	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR
Blue Mountain Springs	5900	42	16.9	6-2-66	11.4	13.5
Fish Creek	7900	48	15.0	b		12.5
Folly Farm	4450	30	12.5	b		
Silvies	6900	48	16.4	b		
Snow Mountain	6300	48	16.7	6-6-66	16.4	16.6
Starr Ridge	5150	36	10.6	6-2-66	9.0	10.4
Stinking Water Summit	4800	48	21.9	5-31-66	21.4	21.9 <sup>f</sup>
Willow-Bald	5000	24	6.6	6-6-66	4.6	6.2

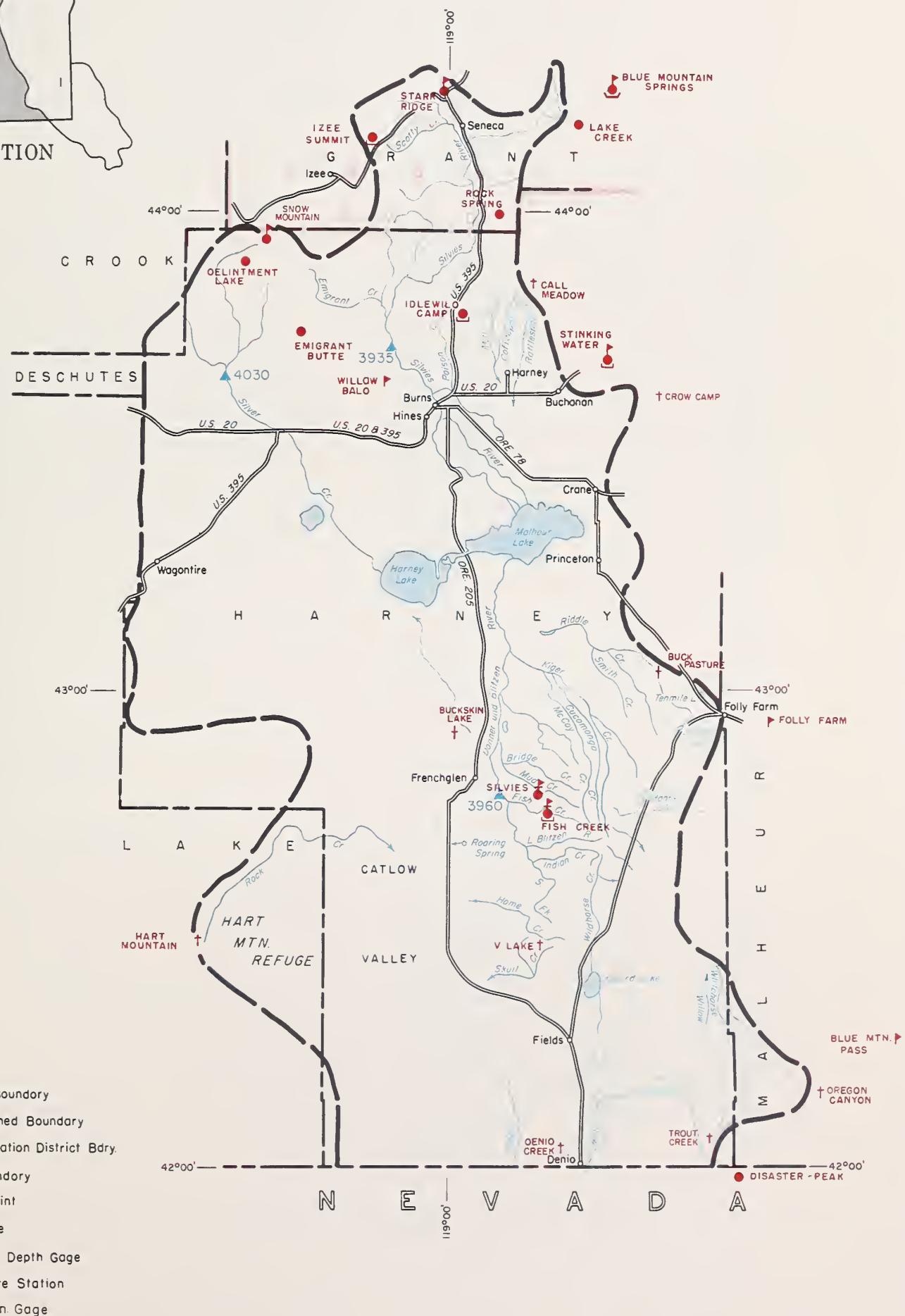
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1948-62 adjusted average. (i) 1948-62, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

# HARNEY BASIN WATERSHEDS

10 0 10 20 30  
SCALE IN MILES



WATERSHED LOCATION



# Harney Basin Watersheds

PREVIOUSLY UNPUBLISHED OREGON SNOW SURVEY DATA  
1965-66 Season

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Anthony Lake (Alternate)	18E31	12/29/65	21	4.0
Anthony Ski Hill	18E33	1/26/66	51	14.2
Bly 101 Ranch (PP&L)	10	1/15/66 2/15/66	8 9	1.8 3.0
Cascade Summit*	22F3	1/14/66 2/14/66 3/14/66 4/15/66	64 85 85 70	21.0 28.5 32.5 31.8
Cascade Summit (Alternate)	22F29	1/14/66 1/25/66 2/14/66 2/23/66 3/14/66 3/28/66 4/15/66 4/29/66	60 72 81 72 80 80 64 52	19.3 22.2 26.5 25.3 31.0 33.3 28.0 23.8
Champion	22F9	1/13/66 2/15/66 3/15/66 4/15/66	82 108 102 80	29.0 35.2 43.0 42.8
Chemult (PP&L)	2	1/15/66 2/14/66	38 41	5.0 14.0
Chiloquin (PP&L)	3	1/15/66	8	3.2
Cooper Spur	21D25	11/1/65 11/15/65 12/1/65 12/15/65 1/17/66 2/15/66 3/15/66	0 0 4 T 29 45 39	0.0 0.0 1.1 T 11.5 16.3 16.2
Crystal (PP&L)	4	1/14/66 2/12/66	34 32	4.6 13.0

\*Course disturbed--average of last two samples only.

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Dead Horse Grade	21E8	1/11/66	38	11.6
Detroit City	22E1	1/14/66	11	4.2
		2/15/66	5	2.0
		3/15/66	0	0.0
		4/15/66	0	0.0
Detroit Dam	22E2	1/14/66	T	T
		2/15/66	0	0.0
		3/15/66	0	0.0
		4/15/66	0	0.0
Fish Creek (Aerial)	18G2a	3/2/66	36	11.2
		4/1/66	34	14.3
Fort Klamath (PP&L)	5	1/15/66	19	6.6
		2/15/66	25	7.2
Golden Curry	22F10	1/13/66	35	14.2
		2/15/66	46	15.2
		3/15/66	39	13.8
		4/15/66	0	0.0
Goodrich Lake	18E6	1/11/66	66	18.4
Harriman Lodge (PP&L)	8	1/15/66	12	3.6
		2/15/66	19	6.1
Hogg Pass	21E6	1/14/66	101	32.2
		2/15/66	115	41.5
		3/15/66	125	49.7
		4/15/66	104	49.5
Kirk (PP&L)	6	1/15/66	32	8.8
		2/13/66	32	9.9
Lake of the Woods	22G15	1/15/66	27	8.8
		2/14/66	38	11.2
		3/14/66	34	12.0
		4/13/66	18	7.6
		5/14/66	0	0.0
Layng Creek R. S.	22F13	1/13/66	0	0.0
		2/15/66	0	0.0
		3/15/66	0	0.0
		4/15/66	0	0.0
Lost Creek Ranch	22E4	1/11/66	18	6.6

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Lund Park	22F12	1/13/66	0	0.0
		2/15/66	5	1.5
		3/15/66	0	0.0
		4/15/66	0	0.0
Marion Forks	21E4	1/14/66	38	13.6
		2/15/66	54	18.6
		3/15/66	50	21.5
		4/15/66	37	16.6
McCredie Springs	22F6	1/14/66	0	0.0
		2/14/66	5	1.3
		3/14/66	0	0.0
		4/15/66	0	0.0
McKenzie	21E7	1/11/66	89	28.6
McKenzie Bridge	22E5	1/11/66	7	2.6
Meridian Dam	22F8	1/14/66	0	0.0
		2/14/66	0	0.0
		3/14/66	0	0.0
		4/15/66	0	0.0
Mill City	22E3	12/29/65	6	1.7
		1/14/66	0	0.0
		2/15/66	0	0.0
		3/15/66	0	0.0
		4/15/66	0	0.0
North Umpqua	22F16	1/14/66	44	14.6
Oakridge	22F7	1/14/66	0	0.0
		2/14/66	0	0.0
		3/14/66	0	0.0
		4/15/66	0	0.0
Parkdale	21D23	11/1/65	0	0.0
		11/15/65	0	0.0
		12/1/65	0	0.0
		12/15/65	0	0.0
		1/17/66	8	3.3
		2/15/66	8	3.6
		3/15/66	0	0.0
Peavine Ridge	21D14	11/29/65	6	1.0
		1/20/66	45	17.5
		3/17/66	78	29.2
Phlox Point	21D8	12/1/65	22	5.2

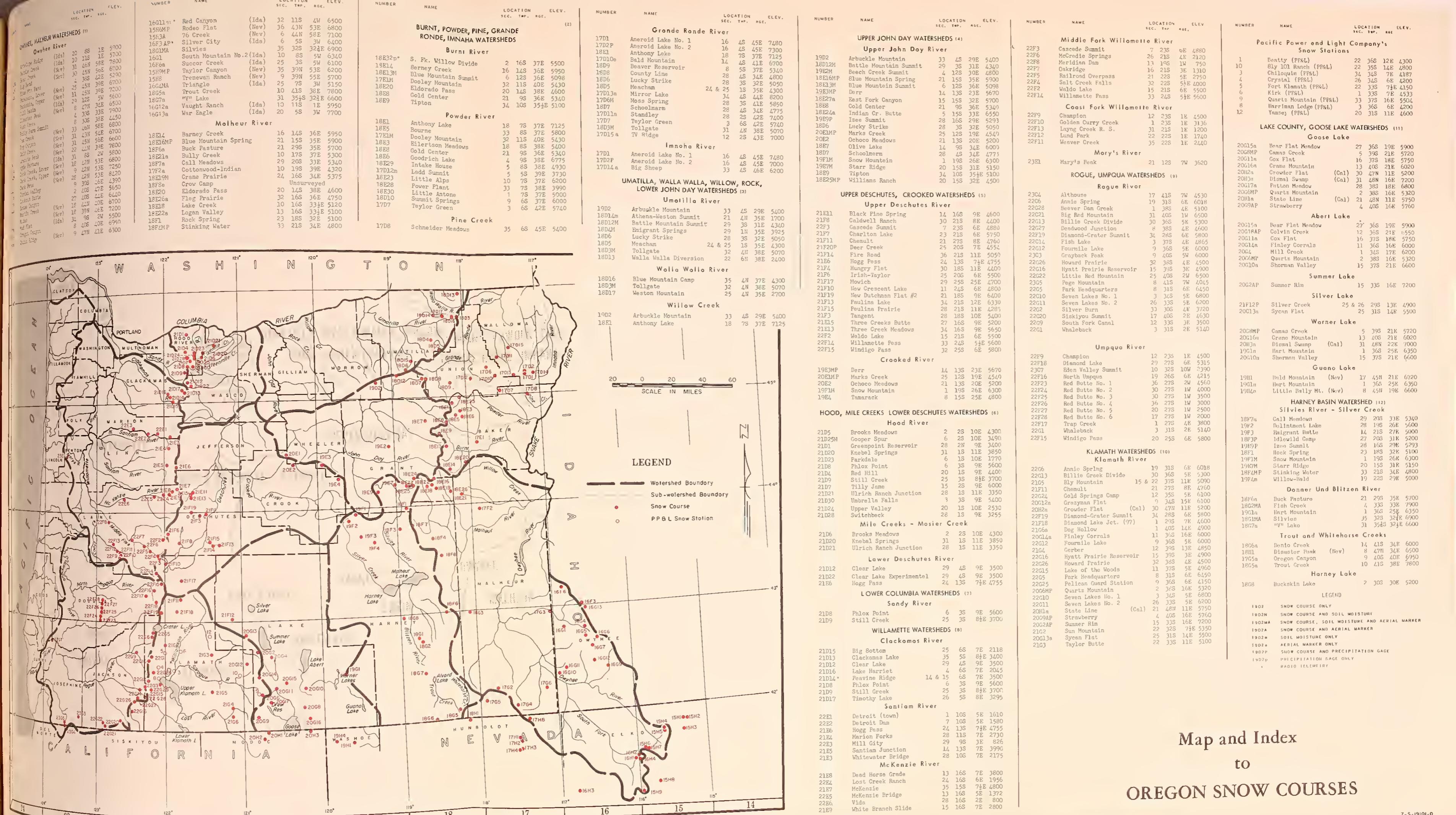
<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Quartz Mountain	20G6	1/14/66 2/14/66 3/16/66 4/15/66	19 28 26 0	5.5 7.7 8.4 0.0
Quartz Meadow Extension		12/30/65 1/14/66 1/28/66 2/14/66 2/28/66 3/16/66 3/29/66 4/15/66 4/29/66	17 19 22 28 26 26 15 0 0	3.6 5.7 6.1 7.6 8.4 7.9 6.1 0.0 0.0
Quartz Mountain (PP&L)	9	1/14/66 2/14/66 3/16/66 4/15/66	23 31 31 4	6.3 9.0 10.0 1.5
Railroad Overpass	22F5	1/14/66 2/14/66 3/14/66 4/15/66	14 31 0 0	4.2 10.4 0.0 0.0
Red Butte #5	22F27	1/10/66	21	9.0
Salt Creek Falls	22F4	1/14/66 2/14/66 3/14/66 4/15/66	44 69 59 41	15.7 21.6 24.0 19.2
Santiam Junction	21E5	1/14/66 2/15/66 3/15/66 4/15/66	70 89 83 48	23.3 28.3 33.7 23.2
Silver Burn	22G2	1/7/66	49	15.6
Silvies (Aerial	18Gla	3/2/66 4/1/66	19 3	5.7 1.3
Siskiyou Summit	22G20	1/15/66 2/13/66 3/15/66 4/15/66	34 42 30 0	13.5 15.8 13.8 0.0
South Fork Canal	22G9	1/8/66	25	8.8
Summer Rim (Aerial)	20G2a	2/26/66 3/25/66	42 46	11.8 17.9

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Trap Creek	22F17	1/11/66	36	12.3
Upper Valley	21D24	11/1/65	0	0.0
		11/15/65	0	0.0
		12/1/65	T	T
		12/15/65	0	0.0
		1/17/66	18	7.3
		2/15/66	29	10.1
		3/15/66	20	8.6
Vida	22E6	1/11/66	0	0.0
Weaver Creek	22F11	1/13/66	9	3.2
		2/15/66	8	1.9
		3/15/66	0	0.0
		4/15/66	0	0.0
White Branch Slide	21E9	1/11/66	22	7.1
Whitewater Bridge	21E3	1/14/66	24	8.6
		2/15/66	33	11.6
		3/15/66	21	9.1
		4/15/66	0	0.0

ERRATA: 1966 SNOW MEASUREMENTS PUBLISHED IN ERROR

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Aneroid Lake #2	17D2			
Previously Published		4/2/66	75	26.0
Correct Data		4/2/66	75	27.0
Big Sheep (Aerial)	17D14a			
Previously Published		4/2/66	45	18.0
Correct Data		4/3/66	44	17.6
Caldwell Ranch	21F8			
Previously Published		3/28/66	26	11.2
Correct Data		3/28/66	26	10.7
Call Meadows (Aerial)	18F7a			
Previously Published		4/1/66	0	0.0
Correct Data		4/1/66	2	0.7

<u>SNOW COURSE Name</u>	<u>No.</u>	<u>Date</u>	<u>Depth (In.)</u>	<u>Water (In.)</u>
Patton Meadows (Aerial)	20G17a			
Previously Published		2/26/66	37	10.4
Correct Data		2/26/66	37	10.7
Seven Lakes #1	22G10			
Previously Published		3/1/66	132	47.1
Correct Data		3/1/66	132	47.2
Stanley (Aerial)	17D11a			
Previously Published		3/1/66	50	15.0
Correct Data		3/1/66	53	15.9
Summer Rim	20G2			
Previously Published		2/28/66	45	12.8
Correct Data		2/28/66	45	13.6
Trout Creek (Aerial)	18G5a			
Previously Published		4/1/66	10	3.5
Correct Data		4/1/66	10	4.2





## The Following Organizations Cooperate in the Oregon Snow Survey Work

### STATE

Idaho Cooperative Snow Surveys  
Nevada Cooperative Snow Surveys  
Oregon State University  
Oregon State Engineer and Corps of State Watermasters  
Oregon State Highway Engineers  
Soil and Water Conservation Districts of Oregon

### COUNTY

Douglas County Water Resources Survey

### FEDERAL

Department of Agriculture  
Cooperative Extension Service  
Forest Service  
Soil Conservation Service  
Department of Commerce  
Weather Bureau  
Department of the Interior  
Bonneville Power Administration  
Bureau of Land Management  
Bureau of Reclamation  
Fish and Wildlife Service  
Geological Survey  
National Park Service  
Department of National Defense  
Corps of Army Engineers

### PUBLIC UTILITIES

Pacific Power and Light Company  
Portland General Electric Company  
California-Pacific Utilities Company

### MUNICIPALITIES

City of Baker  
City of La Grande  
City of The Dalles  
City of Walla Walla

### IRRIGATION DISTRICTS

Arnold Irrigation District  
Associated Ditch Companies  
Burnt River Irrigation District  
Central Oregon Irrigation District  
East Fork Irrigation District  
Grants Pass Irrigation District  
Hood River Irrigation District  
Jordan Valley Irrigation District  
Juniper Flat Irrigation District  
Lakeview Water Users, Incorporated  
Medford Irrigation District  
Middle Fork Irrigation District  
North Board of Control - Owyhee Project  
North Unit Irrigation District  
Ochoco Irrigation District  
Rogue River Valley Irrigation District  
South Board of Control - Owyhee Project  
Squaw Creek Irrigation District  
Talent Irrigation District  
Tumalo Project  
Vale-Oregon Irrigation District  
Warmsprings Irrigation District

### PRIVATE ORGANIZATIONS

Amalgamated Sugar Company  
The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
1218 S.W. WASHINGTON ST.  
PORTLAND, OREGON 97205

OFFICIAL BUSINESS

U. S. POSTAGE AND FEES PAID  
U. S. DEPARTMENT OF AGRICULTURE

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE  
**COOPERATIVE SNOW SURVEYS** —

Furnishes the basic data  
necessary for forecasting  
water supply for irrigation,  
domestic and municipal water  
supply, hydro-electric power  
generation, navigation,  
mining and industry

—  
“The Conservation of Water begins  
with the Snow Survey”